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POPULATION TODAY

Vol. 17, No. 11 November 1989

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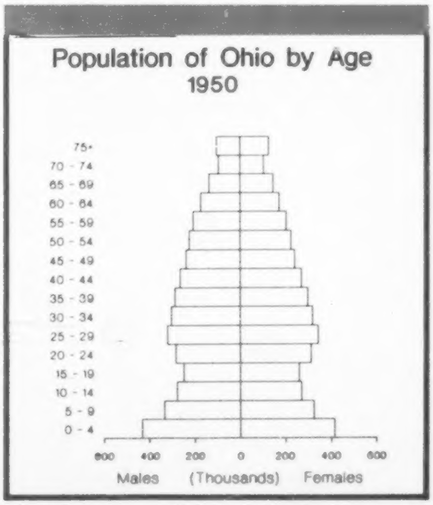
Population of Ohio by Age
1950

Making pyramids this slick can be easy. (See page 10.)

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FROM THE EDITOR'S DESK

You can't get there from here.

PRB answers well over 100 population-related questions a week from the general public. . Being a population resource is a hard vocation – many of the figures are either older than one would like or broader than a barn door, if they exist at all.

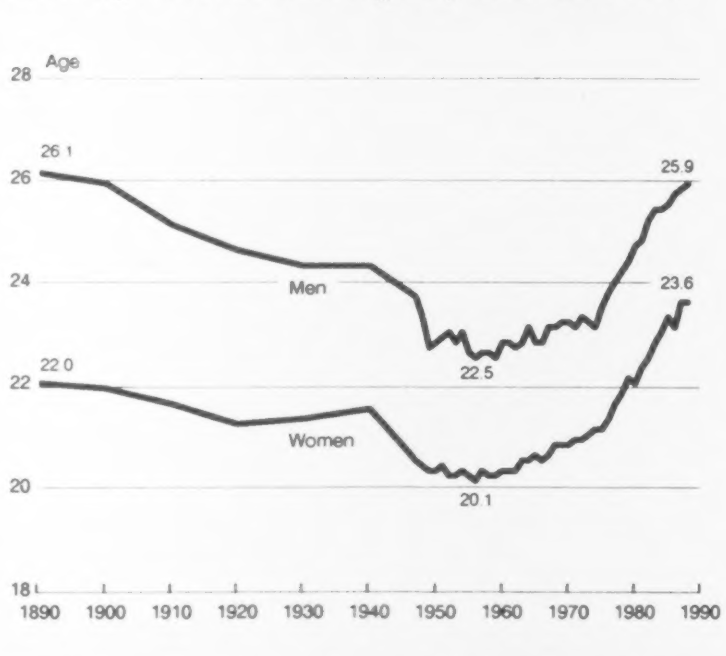
Herewith a list of questions which you would think have readily available answers. But *Noooooo*

- How many countries are there? Colonies, disputed areas, and jurisdictional nuances make this a tough call.
- How many children will today's women have? You can project how many they *would* have given various assumptions, including the fertility of yesterday's women, but that's about all.
- Number of Asian Americans? The most recent numbers for this group are as of 1980.
- Number of emigrants? A ballpark figure is 160,000 annually, but nobody actually *counts* them as they leave the U.S.
- Percentage of population who are only-children? No figures on this subpopulation are available; you could probably make a *guess* based on women's parity and come up with a figure of 18 percent.
- Numbers of people around the world, by race, language, or religion? Forget it.
- Population of the Pacific Rim? No problem with country populations, but what *is* the Pacific Rim?

– Art Haupt

SPEAKING GRAPHICALLY

Median Age at First Marriage by Sex: 1890-1988



The U.S.'s 20th-century romance with earlier marriage age is over, the Census Bureau reports. As the graph above shows, men marry at the same average age their forbearers did in 1890, while women are marrying later than theirs. However, the average age difference between marrying men and women has diminished.

Single people aged 18 and over number 66 million as of 1988, constituting 37 percent of all adults. Nonetheless, it is estimated that about 90 percent of people will marry at some point in their lives.

Source: *Current Population Reports*, P-23, No. 162, Studies in Marriage and the Family, 1989.

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*Educators and students should send supporting documentation

Demographers Convene in India

In New Delhi for IUSSP were (from left to right) Indian Prime Minister Rajiv Gandhi, Organizing Committee Chair Ashish Bose, UNFPA Director Nafis Sadik, and IUSSP Honorary President William Brass

Nearly 1,000 population experts from around the world assembled during September 20-27 at New Delhi's Vigyan Bhavan Center for the XXIst International Population Conference, sponsored jointly by the International Union for the Scientific Study of Population (IUSSP) and the Indian Association for the Study of Population.

India's Prime Minister, Rajiv Gandhi, opened the conference. (In 1951, the VIIth International Population Conference was also held in New Delhi, under the patronage of Prime Minister Jawaharlal Nehru.) In his address, Gandhi reaffirmed his top-level commitment to reducing India's population growth rate and urged that India's family planning efforts move closer to the grassroots level and increase the involvement of women and the poor.

"I would hazard a prophecy," Gandhi said, "that a delivery system run and supervised by the poor, deprived, and largely illiterate people of India will prove far more effective than the paternalistic model of planning, administration and implementation which we have relied upon so far."

Ashish Bose, President of the Indian Association for the Study of Population and Chair of the Conference Organizing Committee, echoed the PM's sentiments in his own welcome: "I have been pleading for a long time for a shift from *population* to *people;* a shift from the number game of targets and achievements to a more realistic and humane approach in implementing our programs."

Delegates from 90 countries chose from 27 formal sessions, 22 informal sessions, and two roundtables dealing with topics that ranged from cohabitation, aging, immigration issues in developed countries to population policies, the growth of mega-cities, and the effectiveness of family planning programs in LDCs. Asian demographic studies were prominent on the agenda. There were also sessions on new methodologies and data-collection issues, including the use of laptop computers in survey research.

With nearly 1,800 members from more than 100 countries, IUSSP is the sole worldwide organization of professionals in population studies.

During the meetings, three IUSSP General Assemblies reviewed reports on the work of special research committees and inaugurated new officers, including Massimo Livi-Bacci (Università degli Studi di Firenze) as President and Jack Caldwell (Australian National Univ.) as Vice President.

IUSSP brought together population people from around the world

Jane Menken (Univ. of Pennsylvania) was one of nine Council members elected, and Mary Kritz (Cornell Univ.) will serve on the Nominating Committee for elections to be held in 1993.

During their off-hours, delegates sampled the varieties of Indian food offered at hotel restaurants and shopped for silk, gems, and other Indian specialties at local bazaars and handicraft centers. Delegates who chose the excursion to the splendid Taj Mahal in Agra, 200 km (125 miles) southeast of Delhi, also had an opportunity to experience population pressure first-hand as their buses (or taxis) dodged people, ox carts, pedicabs, trucks, and other buses along the crowded road that connects the two cities.

The United States was sparsely represented at the Conference. Limited financial support for the costly trip along with scheduling of the meeting just after the start of the school year kept many potential delegates at home. African delegates expressed concern that no one from their ranks was elected to the Council and proposed that measures be taken to maintain adequate representation of their interests in planning future IUSSP activities and conferences.

IUSSP meets every four years, and its next meeting may prove more accessible to North Americans. Speaking on behalf of Canadian demographers at the closing General Assembly, Alan Simmons (York Univ.) presented an invitation endorsed by Prime Minister Brian Mulroney and other top officials for the XXIInd International Conference to be held in Montreal in 1993.

– T.M.

22 Percent of Mexico Moving North?

A *Los Angeles Times* poll recently investigated the attitudes of Mexicans on problems in their country and their desire to live in the U.S. The survey, conducted in 42 randomly selected Mexican towns and reported in August, found that 22 percent said that it was "very likely" or "fairly likely" that they would be living in the U.S. by next year.

Although the poll is thought to represent respondents' attitudes more than immediate plans, taking the survey results literally and applying them to the national population, these responses would indicate that about 19 million Mexicans are packing their bags. – *C.H.*

New Module For Students

The third edition of the popular teaching module, "World Population: Toward the Next Century," is now available. This module is a short, clearly written unit on world population trends for students and nonexperts. It answers some of the most commonly asked questions about world population trends. This edition includes new questions on AIDS, carrying capacity, population density, and the environment, as well as the old standbys – current population figures, population distribution, family planning projections and policies.

The reading includes maps, charts, and tables. The module also contains a glossary, reproducible worksheets, and a list of books and other publications for additional research and reference. "World Population: Toward the Next Century" is accompanied by a teacher's guide, which includes worksheet answers in the module and audiovisual resources. – *K.C.*

Copies of "World Population: Toward the Next Century" with the teacher's guide can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB. Prices to nonmembers are $3.00 per single copy; 2 copies or more $2.25 ea. PRB members receive a 20 percent discount for one copy. Orders of $50 or less must be prepaid and include $1.00 or 5 percent (whichever is greater) for postage and handling. Visa and MasterCard accepted. Call 1-800-877-9881.

WASHINGTON WATCH

Appropriations Update

In mid-September, the full Senate Appropriations Committee approved its version of the Fiscal Year (FY) 1990 appropriations bill for the Departments of Labor, Health and Human Services, Education, and Related Agencies. The Committee approved allocations of $450.6 million for the National Institute of Child Health and Human Development (NICHD) and $245.5 million for the National Institute on Aging (NIA), which are the two largest sources of funding for demographic research.

The Appropriations Committee included a provision that would delay any decision on providing funds for NICHD's survey of human sexual behavior until its pretest instrument – already funded and currently awaiting final approval from the Department of Health and Human Services – is completed. In its version of the bill passed earlier in the summer, the House voted to delete more than $11 million earmarked for the survey, denouncing the project as a misuse of public funds.

Supporters of the study – which is expected to provide the first new data on Americans' sexual behavior and experiences since the Kinsey Report of the 1940s and may help target at-risk populations for the AIDS virus – have expressed hope that the Senate language will allow the pilot study to continue and determine the future of the project later.

Other highlights of the Senate appropriations bill include: 1) language urging NIA to begin implementation of a new longitudinal survey of Americans' health and retirement; 2) preservation of the registration of marriage and divorce statistics at the National Center for Health Statistics; and 3) recognition throughout the National Institutes of Health portion of the bill for the role of behavioral and social science research. The Senate bill now goes before the full Senate for approval and ultimately to a joint House-Senate conference which will reconcile both chambers' bills.

Census Developments

The House of Representatives has approved its FY 1990 appropriations bill for the Departments of Commerce, Justice, State, the Judiciary and Related Agencies. Included in the allocation for the Department of Commerce is $1.4 billion for the Bureau of the Census for FY 1990.

Although the House approved $811 million more than the FY 1989 level, several items requested in the President's budget received reduced funding or were not funded at all. For example, the bill includes $1.3 billion for censuses and programs for 1990, more than $57 million less than the budget request. Reflected in the lower allocations are decisions to deny a requested increase of $2 million (and 54 positions) to redesign census surveys and samples and denial of a requested increase of $500,000 to procure additional equipment for computer-assisted interviewing.

Highlights of the package include an allocation of $200,000 to develop a plan and pretest a survey to collect information on individuals with disabilities and an increase of $800 million for additional activities necessary for the 1990 Decennial Census.

In other news, legislation to improve the ability of the Census Bureau to attract and retain a qualified work force for the 1990 Census has been passed by the Senate and signed into law by President Bush. The bill, sponsored by Rep. Tom Sawyer (D-Ohio), exempts military and federal civil service retirees who are hired for short-term, temporary positions during the census from dual compensation provisions of the U.S. Code.

The Census Bureau estimates that it will need 340,000 field workers during its peak operations and this new law is expected to allow the Bureau to tap a pool of workers who otherwise would have been reluctant to risk these federal retirement benefits to work for the Census.

The Census and Population Subcommittee of the House Post Office and Civil Service Committee is continuing its consideration of legislation to exclude undocumented residents in population counts used for reapportionment. The bill, introduced by Rep. Thomas Ridge (R-Pa.), contains provisions similar to an amendment adopted by the Senate in July as part of an immigration bill.

Foreign Assistance

The impetus for reform that dominated the formulation of a new foreign aid bill in the House was absent in the Senate as the Senate Foreign Relations Committee approved a foreign assistance reauthorization bill which includes provisions to authorize $201.9 million for population programs for FY 1990. This amount represents a $3.9 million increase over current funding and is $229,000 more than the President requested. The bill also incorporates two population policy provisions into the reauthorization.

The first, an amendment introduced by Sen. Nancy Kassebaum (R-Kan.), reverses current Administration policy which prohibits the transfer of U.S. population assistance to any foreign nongovernmental organization that uses its own funds to provide information or services relating to abortion. In its report accompanying the bill, the Foreign Relations Committee maintained that the policy, commonly known as the Mexico City Policy, goes well beyond any restriction in U.S. law and only serves to impede the effectiveness of the overseas family planning program. The Kassebaum amendment runs counter to provisions of the House Foreign Aid bill that would effectively codify the Mexico City Policy. The House foreign aid package was approved by the full House earlier this year.

The other provision, attached to the bill by Sen. Jesse Helms (R-N.C.), requires that foreign assistance not be conditioned on the acceptance, by any government or entity, of population planning assistance or any particular program of population planning. The bill now moves onto the Senate floor where it may be considered later in the fall after the Senate completes its work

Continued on page 9

SURVEY REPORT

Jamaica

Jamaica, the third-largest Caribbean island, has a population of approximately 2.5 million. The Jamaican government has long been concerned about the rate of growth of the island's population. In 1967, the National Family Planning Board was created to administer and promote family planning programs in Jamaica. The relative success of the Board's activities has been documented by the decennial censuses and by specialized fertility surveys in the 1970s and 1980s.

The most recent survey, the 1989 Jamaican Contraceptive Prevalence Survey (JCPS), found that current rates of childbearing had declined 17 percent between 1983 and 1989, the total fertility rate falling from 3.5 to 2.9 lifetime children per woman.

Most Jamaican women recognize modern contraceptive methods; more than 90 percent of the women interviewed knew of the pill, injection, female sterilization, or condom. Almost all women had heard of the specific brands of pills (Perle) and condoms (Panther) distributed by the National Family Planning Board. Recognition of most modern methods has increased since the 1983 JCPS, with the greatest increase seen in percent of women knowing of male sterilization.

Use of contraception has also been increasing in Jamaica. In 1975-1976, 38 percent of women in union were using contraception. This grew to 51 percent in 1983, an increase of 35 percent. Although still increasing, contraceptive prevalence grew by only 6 percent between 1983 and 1989. Fifty-five percent of all women in union are currently using a method of contraception. Unlike many other developing countries, contraceptive prevalence in rural Jamaica actually exceeds that in the cities (56 percent versus 52 percent). The pill is the most commonly used method (19 percent), followed by female sterilization (14 percent), condom (9 percent), and injection (8 percent). Use of female sterilization and the condom have been increasing, while use of the IUD and vaginal methods has declined. Health centers and clinics are the primary sources for the pill and injection. Pharmacies are major providers of condoms and secondary providers of pills. Hospitals are the most common providers of female sterilization.

Almost all Jamaican mothers giving birth in the five years prior to the survey received some antenatal care and more than 9 out of 10 births were attended by health personnel. Almost two-thirds of the mothers received an anti-tetanus injection to protect their child from neonatal tetanus. Breastfeeding is almost universal and the average duration of breastfeeding is 13 months.

Virtually all Jamaican women have heard of AIDS, regardless of residence, age, or union status. Fourteen percent of these women feel they are at a great risk of contracting AIDS, 13 percent are at some risk, 20 percent at not much risk, and 53 percent say they are at no risk. Although many of these women correctly identified possible routes of transmission of the AIDS virus, misconceptions were common. Fifty-eight percent of the women having heard of AIDS believe the virus can be transmitted by giving a blood donation. Thirty-five percent think insect bites are routes of transmission, 16 percent think that sharing personal items can spread the virus, and 8 percent think being in the same room with a person with AIDS is risky.

—B.S.

DEMOGRAPHER'S PAGE

The Decline That Wasn't

by Robert D. Retherford, G. Mujtaba Mirza, Mohammad Irfan, and Iqbal Alam

This Demographer's Page, which points out the pitfalls of statistical estimating, is adapted from the authors' article "Fertility Trends in Pakistan—The Decline That Wasn't," that appeared in Asian and Pacific Population Forum, *Vol. 1, No. 2, February 1987.*

Robert D. Retherford is an Assistant Director and Research Associate at the East-West Population Institute, Honolulu. G. Mujtaba Mirza is former Census Commissioner of Pakistan. Mohammad Irfan is Chief of Economic Research at the Pakistan Institute of Development Economics. Iqbal Alam is with the Population Division, Economic and Social Commission for Asia and the Pacific (ESCAP), Bangkok.

Total fertility in Pakistan fell by about 12 percent between 1960 and 1975, according to findings from the 1975 Pakistan Fertility Survey (PFS). A quite different picture emerges, however, when fertility trends estimated from other data sources are juxtaposed with the PFS's estimated trends. Not only is there no evidence of *any* fertility decline; fertility appears actually to have increased during this period, both in rural and urban areas and in the country as a whole.

How could figures show an apparent decrease when an increase was taking place? That is the subject of the present analysis, which juxtaposes and compares own-children estimates of fertility trends derived from four successive household surveys: the 1973 Housing, Economic, and Demographic (HED) Survey, which was a reinterview (with a longer questionnaire) of a large subsample from the 1972 Census; the 1975 PFS, which was part of the World Fertility Survey; the 1979 Population, Labour Force, and Migration (PLM) Survey; and the 1981 Census.

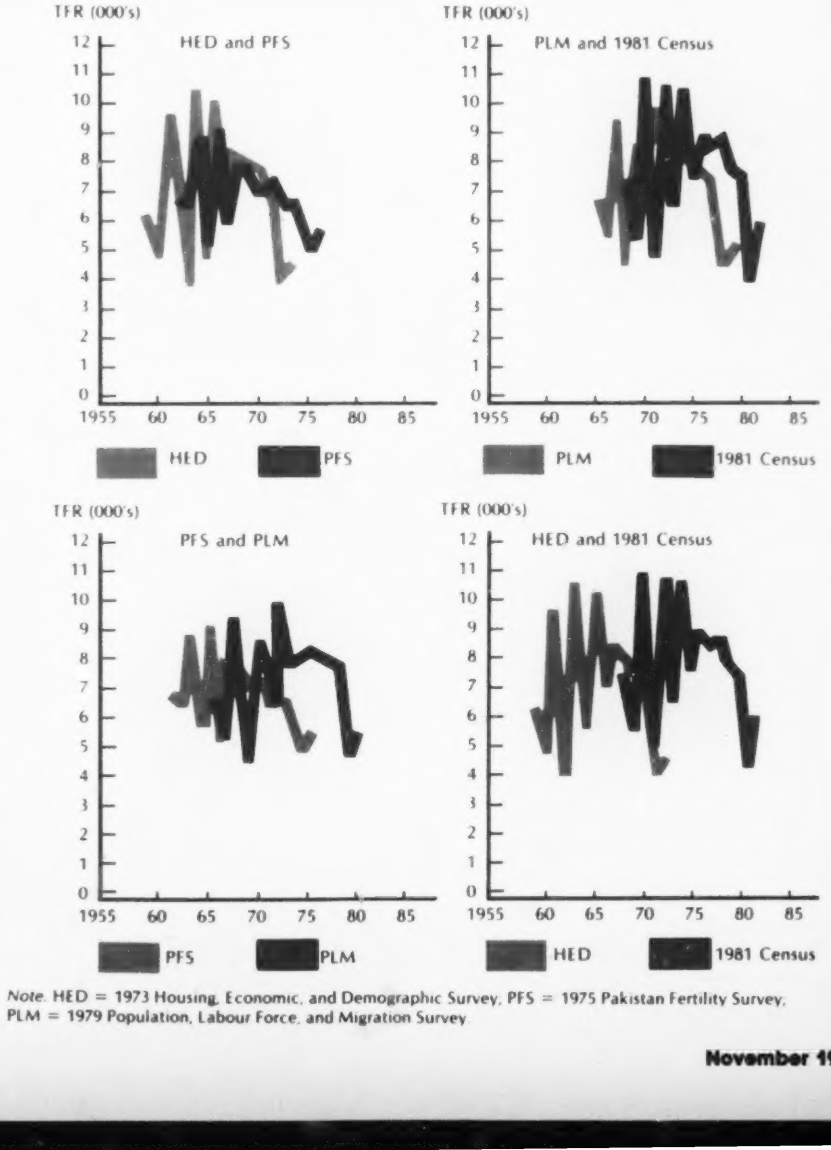
Results from Four Surveys

According to the PFS, the total fertility rate was estimated to be steady at about 7.1 children per woman during 1960-1970, falling to about 6.3 in 1975. Analysis of this trend showed that most of the decline was due to rising age at marriage.[1] These results were based on fertility estimates derived from birth histories from the survey's individual sample of ever-married women aged 15-49. A subsequent application of the own-children method of fertility estimation (in which couples' fertility is estimated from census data on households) to the survey's household sample indicated an even steeper decline in total fertility.[2]

Own-children estimates of the trend in the TFR, derived alternatively from each of the four surveys, are shown in Figure 1 and Table 1. Each data source individually points to large fertility oscillations 8-15 years before the survey, a sharp decline during the next six years, and a slight upturn in the year just before the survey.

Any one of the four data sources by

Figure 1: Comparison of Total Fertility Rates (TFR) from Four Pakistan Surveys



Note. HED = 1973 Housing, Economic, and Demographic Survey, PFS = 1975 Pakistan Fertility Survey, PLM = 1979 Population, Labour Force, and Migration Survey.

Table 1: Own-Children Estimates of Total Fertility Rates (TFR) for Pakistan, 1959-1981

	TFR (per 1,000 women)			
Year	1973 HED	1975 PFS	1979 PLM	1981 Census
1959	6,250			
1960	4,794			
1961	9,741	6,859		
1962	3,877	6,396		
1963	10,651	9,007		
1964	5,210	5,751		
1965	10,243	9,230	6,802	
1966	7,017	6,068	5,472	
1967	8,479	8,024	9,503	7,529
1968	8,150	7,809	4,430	5,510
1969	7,538	6,888	8,755	11,038
1970	7,344	7,521	7,264	4,832
1971	6,603	6,463	9,926	10,772
1972	3,883	6,814	7,825	6,263
1973	4,600	5,862	8,007	10,818
1974		4,856	8,248	7,278
1975		5,691	7,903	8,911
1976			7,694	8,297
1977			7,296	8,652
1978			4,624	7,749
1979			5,241	7,507
1980				4,084
1981				6,030
Total*	6,899	6,816	7,239	7,604

Source. Unpublished tabulations derived from the 1973 Housing, Economic, and Demographic Survey (HED), the 1975 Pakistan Fertility Survey (PFS), the 1979 Population, Labour Force, and Migration Survey (PLM), and the 1981 Census.

*The "total" TFRs were calculated from age-specific birth rates obtained by appropriately aggregating numerators (births) and denominators (women of a specific age).

itself might therefore lead one to conclude that a fertility decline was well under way by the time of the survey. But superimposing the four trend lines on top of one other indicates that fertility actually changed very little. Figure 1 shows very clearly that the four trends all began at approximately the same higher level and ended at approximately the same lower level, with a characteristic pattern of distortion in between. Thus the trend pattern repeats from one survey to the next, being simply displaced by the time interval between successive surveys. The figure is split into four panels, each showing a pair-wise comparison, so that the repeated pattern can be seen more clearly.

The first panel suggests that fertility may have increased between the HED and PFS surveys, since the end point of the trend estimated from the PFS is higher than that from the HED survey. But closer examination reveals that fertility peaks tend to be uniformly higher and fertility troughs uniformly lower in the HED-derived trend than in the PFS-derived trend.

These peaks and troughs are due mainly to age heaping on preferred digits. Heaping on age 10, for example, causes an estimated fertility peak in the 11th year before the survey and adjacent fertility troughs in the 10th and 12th years before the survey.

The comparison indicates two trends of about the same level and pattern, merely displaced in time. Thus the comparisons indicate that in reality fertility changed relatively little.

A clearer idea about how the TFR has been changing can be gained by aggregating the fertility data over calendar years. The more the data are aggregated, the greater the tendency for errors from age misreporting to cancel one another out. Our strategy was to obtain an estimate of the TFR for the entire 15-year estimation period previous to each survey.

Results are shown in the last row of Table 1 and in Table 2. The TFRs aggregated over 15-year time periods are all in the neighborhood of 7 children per woman. Rural fertility tends to exceed urban fertility slightly, especially for estimates derived from the later surveys, as shown in Table 2. The widening rural-urban difference reflects fertility increases that are larger in rural than in urban areas. It is worth noting that a period of fertility increase, occurring just before the onset of fertility transition, has often been observed in other countries, with likely causes being declines in widowhood and breastfeeding.[3] Thus the occurrence of fertility increase in Pakistan is by no means extraordinary.

Note, however, that the increases in the aggregated TFRs between the PLM survey and the 1981 Census in Table 2 are implausibly large, since the consecutive 15-year time periods (1965-1979 and 1967-1981) largely overlap, differing in time location by only two years. The results are therefore not very consistent, despite the high level of aggregation.

Discussion

For the trend estimated from each survey, Figure 1 shows a spurious pattern of fertility change that consists of large fertility oscillations 8-15 years before the survey, a substantial fertility decline during the next six years, and a slight fertility upturn in the year just before the survey. In Asia, this pattern has been found in own-children fertility estimates not only for Pakistan but also for Nepal and Indonesia.[4] We suspect that it also characterizes India and Bangladesh, but we do not have the detailed own-children fertility estimates necessary to test this prediction.

Retherford and Alam[5] have advanced the hypothesis that the large oscillations during the period approximately 8-15 years before the survey reflect

Continued on next page

Table 2: Own-Children Estimates of Total Fertility Rates (TFR) by Urban-Rural Residence

Survey and time period	TFR (per 1,000 women) Rural	Urban	Total
HED 1959-1973	6,940	6,727	6,899
PFS 1961-1975	6,810	6,827	6,816
PLM 1965-1979	7,360	6,932	7,239
1981 Census 1967-1981	7,778	7,305	7,604

Source. Unpublished tabulations derived from the 1973 Housing, Economic, and Demographic Survey (HED), the 1975 Pakistan Fertility Survey (PFS), the 1979 Population, Labour Force, and Migration Survey (PLM), and the 1981 Census.

Demographer's Page

Continued from preceding page

severe heaping on ages 8, 10, and 12, corresponding to births in the 9th, 11th, and 13th years before the survey. They have further hypothesized that the comparatively low fertility estimates during the five years or so immediately preceding the survey are due mainly to age exaggeration from upward rounding of children's ages.

For example, at actual age 0 (corresponding to births during the first year before the survey), it is possible that many children of 11 months (and perhaps younger ages) are reported at age 1, resulting in a deficit of children reported at age 0 and a corresponding underestimate of births during the first year before the survey.

At actual age 1, corresponding to births during the second year before the survey, substantial rounding to two years may occur not only at 23 months of age but also at 22 and 21 months and perhaps even younger ages. Thus the tendency to round upward from age 1 to age 2 may be substantially greater than the tendency to round upward from age 0 to age 1, resulting in an especially large deficit of children reported at age 1.

Upward rounding that is substantially more pronounced for 1-year-olds than for 0-year-olds may explain the frequent and usually spurious finding that fertility is lower in the second year before the survey than in the first year. At actual ages 2, 3, . . . , 8, it is plausible that the rate at which upward rounding increases with age, diminishes with age, so that estimated fertility increases as one moves backward in time. At childhood ages beyond 8 (corresponding to births nine or more years before the survey), heaping on ages 8, 10, and 12 predominates, resulting in sharp peaks in the TFR and in age-specific birth rates (ASBRs) during the 9th, 11th, and 13th years before the survey.

Independent data on contraceptive use also suggest that fertility has remained high and fairly constant in Pakistan, at least up to the end of the 1970s. Contraceptive use rates in 1975 were very low, in the neighborhood of 5 percent of currently married women of reproductive age, and may actually have decreased to about 3 percent during the late 1970s.[6,7]

Recent estimates for the TFR derived by applying Rele's method to the 1981 Census of Pakistan suggest a TFR of about 6.5, which is about one-half child lower than our estimate of about 7.[8] But the estimate of 6.5 is too low, because it is effectively based on a child-woman ratio of children aged 0-9 to women aged 15-54, which is underestimated because of upward rounding of children's ages to age 10.

It is also noteworthy that fertility trends estimated from birth histories in the PFS and PLM surveys show essentially the same pattern of poor overlap as do fertility trends estimated from own-children data in these surveys, for the same hypothesized reasons having to do with age misreporting. The birth histories yield two declining fertility trends that start at about the same higher level and end at about the same lower level, the trends differing only in being displaced in time by the interval between the two surveys.[9] Again the conclusion is that in reality fertility did not decline at all.

Continued on next page

ANNOUNCEMENTS

Call for Visiting Scholar

Applications are invited for the PRB Visiting Scholar Award for the nine-month period beginning September 1990.

The recipient of the award, made available under a grant from the Andrew W. Mellon Foundation, will be expected to spend at least nine months at PRB's Washington, D.C., headquarters carrying out a population-related project of either domestic or international focus. Priority will be given to policy-oriented projects that attempt to synthesize work on a particular topic.

The negotiable stipend is comparable with academic salaries and includes the cost of transportation to and from Washington, D.C. Applicants are requested to submit a brief estimate of their transportation cost and salary requirements.

The closing date for applications is Jan. 15, 1990. To apply, interested individuals should forward a brief description of their planned activities, with a curriculum vitae and a sample of recent publications, to the address below.

Call for Interns

Applications are invited for the PRB Internship Program for either of two upcoming periods:

1. January-May 1990. (Deadline for applications, Dec. 15, 1989; announcement of awards will be made promptly.)

2. Summer 1990. (Deadline for applications, Feb. 1, 1990; announcement of awards will be made Mar. 1, 1990.)

PRB internships provide an opportunity for persons with a strong interest in population to work under the supervision of professional demographers on a wide range of national and international issues.

Interns usually work 35 hours a week and receive a stipend of $8.00 per hour.

Both undergraduate and graduate students are eligible. Some previous population work is useful but not a prerequisite.

Interested individuals should forward a letter of application describing their completed academic studies, future academic plans, interests in the field of population, and any additional information that supports their candidacy. Three letters of recommendation from instructors should be sent separately. Send applications for either intern period to the address below:

Dr. William O'Hare
Visiting Scholar Program
Population Reference Bureau
777 14th St., N.W., Suite 800
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Demographer's Page

Continued from previous page

Conclusion

Each of the four demographic surveys examined here indicates a substantial fertility decline during the seven years or so preceding enumeration. However, when the four estimated trends are analyzed together, it becomes clear that the individually estimated declines are spurious, and that in reality, fertility did not decline at all during the two decades or so preceding the 1981 Census. On the contrary, the results indicate that the TFR actually increased, from somewhat below 7 children per woman to somewhat above 7 children per woman.

The analysis shows additionally how treacherous an enterprise a demographic analysis can be when age misreporting is severe. But it also shows that when several data sources are analyzed together and the results compared in appropriate ways, surprisingly firm conclusions can be reached. They can be reached, moreover, from analysis of simple census-type counts without reliance on detailed birth histories, which are expensive to collect.

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Washington Watch

Continued from page 5

on the 13 appropriations bills. If the bill is approved by the full Senate, it will then be sent to a conference committee where differences with the House bill will be resolved.

However, there has been no move to schedule the bill for floor action and, like the last several attempts to craft a foreign aid bill in the Senate, it may never be approved by the full Senate.

While the foreign aid reauthorization process may again encounter difficulties this year, the FY 1990 foreign assistance appropriations have been winding their way through Congress. The House has approved a FY 1990 appropriations bill for foreign operations. It includes $201 million for population and development assistance with several stipulations.

The Committee included language in the bill that prohibits the provision of funds to any program or organization that supports or participates in coercive abortion or sterilization. The bill also states that population assistance cannot be used to pay for the performance of abortions as a method of family planning or to motivate or coerce abortions and goes on to provide that population funds shall be available only to voluntary family planning projects which offer information about a broad range of family planning methods and services.

In the Senate, a similar bill with the same stipulations has been approved by the Appropriations Committee and is awaiting consideration by the full Senate. The Senate Foreign Operations Appropriations bill allocates $220 million for population assistance programs.

– Brian Cove

Brian Cove is a legislative program assistant in the Washington, D.C. office of the Population Resource Center. The Center monitors legislative issues of concern to the Population Association of America. Neither the Center nor the Association advocates any particular population policy but works to protect funding for quality demographic research.

POPULATION UPDATE

Estimated United States Population:

As of July 1, 1989	248,777,000
As of July 1, 1988	246,329,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports,* Series P-25, No. 1042.

Estimated World Population:

As of November 1989	5,265,000,000
Annual growth	93,000,000

Extrapolated from the mid-1989 population on PRB's *1989 World Population Data Sheet.*

Latest Provisional Statistics for the U.S.: May 1989

	12 months ending with May					
	Number		Rate			
Item	1989	1988	1989	1988	1987	1986
Live births	3,950,000	3,841,000	16.0	15.7	15.5	15.7
Deaths	2,150,300	2,169,000	8.7	8.9	8.7	8.7
Natural increase	1,797,000	1,672,000	7.3	6.8	6.8	7.0
Marriages	2,382,000	2,379,000	9.6	9.7	10.0	10.1
Divorces	1,176,000	1,167,000	4.8	4.8	4.8	4.9
Infant deaths	38,600	38,400	9.8	10.1	10.2	10.4
Population base (in millions)			246.9	244.3	242.1	239.8

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. Monthly Vital Statistics Report (Vol. 38, No. 5) from the National Center for Health Statistics.

TAKE A NUMBER

Bawlamer-Warshington? A bit of a fuss has been raised in the cities of Baltimore and Washington, a tempest prompted by their impending statistical marriage following the 1990 Census. Local news accounts are replete with twinning labels as "Washmore" and "Baltington."

Why? Has some fundamental change been observed in the characters of these completely dissimilar cities? Why was such a realignment not made after the 1980 Census? The situation is dicey since residents of Baltimore reportedly view Washington, along with its suburban Maryland counties, as an alien land. Washingtonians typically view "Bawlamereans" as quaint curiosities. True, Baltimore has seen some changes, highlighted by its successful development of the Inner Harbor area for the convention and tourist trade, but this image ends within a few blocks. The real Baltimore consists of its colorful ethnic neighborhoods, white marble stoops, and crab houses.

The coming statistical consolidation has, in fact, little to do with the two *cities* involved. It is far more a function of the interchange in their suburban counties. Two Metropolitan Statistical Areas (MSAs) are blended into one consolidated Metropolitan Statistical Area (CMSA) if the commuting interchange between them is 15 percent of the *smaller* area's labor force. This requirement drops down to 10 percent if the Urbanized Areas (UAs) of both MSAs are contiguous for at least one mile. In 1980, the MSAs were one mile apart (between Laurel and Columbia, Md.) and the commuting interchange was 9.9 percent, very close to the needed criteria.

But the interchange of commuters is largely a function of journey-to-work patterns among suburban counties such as Howard County (in the Baltimore MSA) and Montgomery and Prince George's (in the Washington MSA). It also results from an accident of geography in that Baltimore's Anne Arundel County wraps around the D.C. area on the east and sends commuters into Washington.

A major controversy may erupt when it comes to actually *naming* this new area. By the rules it would be the Baltimore-Washington CMSA since the central city of Baltimore has a larger population (750,000) than does Washington, D.C. (625,000). This would place the Nation's Capital City in the numerical shadow of Charm City to the North.

There is, however, a more geo-, socio-, culturo-economically acceptable way of demarcating metro areas (Census Bureau take note). In the case of "Washmore," drive around and find the points where the newspaper boxes begin changing over from the *Washington Post* to the *Baltimore Sun*.

—C.H.

SOFTWARE

Pyramid Scheme. While never designed for such a purpose, the popular Harvard Graphics program for IBM PCs can be "forced" to produce a stack of opposed-bar charts that just happens to mimic a population pyramid perfectly. (A laser-printed example of the result appears on page 1.)

Here's how: Switch to Harvard's options settings (accessible through <F8>). Then enter the data (either directly or by importing the numbers). Males, who appear on the pyramid's left, are entered as negative numbers. Until you get all the data and proportions right, let these negative numbers show on the chart. Enter females as positive numbers. Then for your final output call for Y1 Axis Labels as "None," and enter the labels by hand using Draw-Annotate.

To align the bars next to each other, call for the "Step" Bar Style. You'll also want to specify Horizontal Chart as "Yes," and have a "Quarter" Frame Style with the Y Tick Mark Style set to "Out." And don't forget to set your Minimum and Maximum Y1 Axis Values to a level which gives your pyramid good proportions.

When you go to print, try setting the output to "Portrait" form (again on <F8>), and use a one-quarter-page size. If you want to produce color slides, our extensive testing has revealed that a Bar Fill Style of "Both," with a Frame Background set to dark blue and Pattern set to empty bars comes out the best.

To help you experiment, a 360K floppy disk containing a completed set of charts for (as it happens) Ohio is available from PRB for $8.00 postpaid. It comes formatted in Harvard Graphics version 2.0 with all the settings in the right places. Send check to PRB, 777 14th St., N.W., Suite 800, Washington, D.C. 20005 Attn.: *PT* Harvard Disk.

—Stephen J. Tordella

ADDENDA

Sing Out, Demography

I'd like to someday be the owner
of the first house on the Moon/
There would be no neighbors, and
no population boom

—"Stone in
Love with You,"
Stylistics, 1972

CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

MIGRATION AND RESIDENTIAL MOBILITY IN THE UNITED STATES, by Larry Long. New York: Russell Sage Foundation, 1988. 397 pages. $42.50 hardbound. ISBN 0-87154-555-1.

This book is one in the series of census monographs that was commissioned by the National Committee for Research on the 1980 Census. As the nation's foremost migration watcher, Larry Long is well known for his timely and thoughtful writings on U.S. migration trends and issues. In this readable, well-organized monograph, he draws from both historical and recent migration statistics, to provide a broad overview of the current state of the nation's population mobility and redistribution.

The book's introduction provides a useful orientation to the kinds of questions migration analysts ask, and the kinds of data that are available to answer them. Although census place-of-birth statistics have been compiled since 1850, the more useful "Where did you live 5 years ago?" question first appeared in the 1940 Census; and annual nationwide survey questions on migration did not begin until 1948. This expanded data base led to an "explosion" (Long's term) of empirical migration findings in the 1970s, and he concludes the chapter with an amply referenced characterization of the various concerns and approaches that are currently followed by contemporary migration researchers.

The next several chapters take up four fundamental questions on American migration: "How much?" 'Where?" 'Who?" and "With what effect?" Chapter 2 tells us "How much?" By reviewing overall levels of mobility across states, within states, and within counties, it shows that there are historical fluctuations in these levels rather than long-term trends. Yet since the mid-1970s both interstate and local mobility levels have declined. Long proposes several reasons for these declines, including the possibility that they are dominated by the unique experiences of the large baby-boom cohorts. Chapters 3 and 4 deal with the "Where?" question by examining shifts in the nation's migration streams since the mid-1930s. A number of useful maps and charts provide the reader with a ready understanding of how the geography of redistribution has changed, particularly since the late 1970s. Specific at[illegible]on is given to recent selective migration from the rust belt states, and the relative contributions of repeat and return migration are assessed in some detail.

The questions of (a) "Who migrates?" and (b) "What effect?" migration imposes on various areas are addressed in Chapter 5. Here a time series of net migration statistics points up the dramatic effects of post-1970 redistribution for Northeast and Midwest losses, and Southern regional gains. Similar, though less accentuated patterns for the black and poverty populations prompt Long to review earlier research – relating welfare to northern in-migration – in a new context.

The relevant question now is: Will welfare benefits *inhibit the out-migration* of the northern poor? Original data are presented which suggest guarded support for this proposition. Further analyses evaluate the impact of education selectivity in migration, and conclude that some North-to-South transferral of human capital has resulted from recent migration-stream exchanges.

The final three chapters stray beyond the "W" questions to address important supplementary topics. Chapter 6 focuses on metropolitan and nonmetropolitan aspects of population mobility, and reviews recent research on nonmetropolitan growth, intermetropolitan migration determinants, and variations in local mobility levels. Chapter 7 analyzes national survey data on reasons for moving across states and regions, and presents some surprising findings regarding the importance movers attach to noneconomic motivations. The concluding chapter presents international comparisons of geographic mobility levels across several developed countries and shows that, in spite of declining mobility levels, Americans are among the most highly mobile of national populations.

This book constitutes a fine example of what a contemporary census monograph should be. It presents timely, useful information in a format that is digestible by a general audience. It includes well-chosen reference tables and charts that do not appear together in any other source. Most important, it is a finely crafted piece of scholarship that integrates the findings of current research in its treatment of each topic, and provides the reader with a comprehensive bibliography for further reference. This volume will be used as both a source book and a textbook, and is destined to become the standard reference in the field.

– William H. Frey

SPOTLIGHT

BRAZIL

Population (1989 est.): 147.4 million
Land area: 3.3 million sq. miles
Births per 1,000 pop. (1989 est.): 28
Deaths per 1,000 pop. (1989 est.): 8
Rate of natural increase (1989 est.): 2.0 percent
Total fertility rate (1989 est.): 3.4 children per woman
Infant mortality rate (1989 est.): 63 deaths per 1,000 live births
Life expectancy at birth (1989 est.): 65 years
GNP per capita (1989 est.): $2,020
Capital: Brasilia

VENEZUELA
GUYANA
French Guiana (FRANCE)
Atlantic Ocean
COL.
SURINAME
BRAZIL
PERU
Brasilia
BOLIVIA
PARA-GUAY
Sao Paulo
Rio de Janeiro
CHILE
ARGENTINA
URUGUAY

by Wendy Patriquin

Brazil, the largest country in South America, ranks fifth in land area in the world and eighth in population. This expansive country borders every other country in South America except Ecuador and Chile, and contains diverse geographic regions. Some of the country's most important natural resources are the Amazon River and the huge tropical rain forests, which provide much of the world's oxygen. Brazil is the only Portuguese-speaking country in the continent. The people are predominantly Roman Catholic.

The heterogeneous population of Brazil can be traced back to the native Indians, the Portuguese colonists, black African slaves who were forcibly brought over from the 16th through the 19th centuries, European immigrants from the 19th and 20th centuries, and Japanese immigrants during the 20th century. The resulting culture, however, is predominantly Portuguese. On the surface it is racially tolerant, but underlying social and economic class tensions have sharp racial overtones.

Since World War II, Brazil's economy has expanded greatly, due primarily to its rapid rate of industrialization. Today only 30 percent of the labor force is employed in the agricultural sector. The government has urged a change from the heavily agricultural export economy of coffee, sugar and rubber. Brazilians now manufacture, among other things, cars, appliances, steel, chemicals, aircraft, and military equipment. Mining is an important component of Brazil's economy, as it is the world's largest exporter of iron ore. As in most countries, rapid industrialization led to unprecedented urban growth spawning slums and shanty towns and making it difficult to provide basic social and health services to the total urban population.

The population of modern Brazil has historically lived on the coast. Long-term efforts to settle the vast tropical interior have met with greater success in recent years, though at controversial cost to the environment. Some 15 million people now live in the Amazon Basin, double the 1970 figure.

Fertility rates in Brazil have been declining since the mid-1960s, particularly in the more urban and developed Southeastern region which includes Rio de Janeiro and São Paulo. Brazilian leadership in the late 1970s and early 1980s did not promote family planning activities, nor did it prohibit them. During this period, the Brazilian family planning association (BEMFAM) was able to expand their operations with less opposition than in previous years.

Despite the fact that the Brazilian government has no official family planning policy, almost two-thirds of all Brazilian women currently-in-union are using contraceptives. Over 90 percent of oral contraceptive and condom users obtained them from private pharmacies, underscoring the minimal role of organized family planning programs in supplying contraceptives. In 1986, 82 percent of women who wanted no more children and 72 percent of those who wanted to delay their next pregnancy were practicing contraception. This high prevalence rate has resulted in a fairly low total fertility rate, currently at 3.1 children per woman, a decline of about 1 child per woman since 1980. Although fertility has declined, the population has continued to grow at a rate of about 2 percent per year, due to falling mortality.

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POPULATION TODAY

Vol. 17, No. 12 December 1989

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UNICEF Joan Liftin

School enrollment improves in Haiti. See page 12.

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FROM THE EDITOR'S DESK

Populandia – *Population Today's* fabled Pacific island – is now 12 years old. According to legend (see December 1988 *PT* and earlier issues), since the beginning of 1978 this Pied Piper continent has been accumulating all the natural increase (i.e., 93 million newborn babes a year) produced by the seven continents.

The populations of those seven continents stopped rising forthwith; now only Populandia grows. Its well-nurtured population, once just 1, now stands at 971,686,740 – teetering on the edge of a billion, and all of them still *pre*-teenagers. Terrifying.

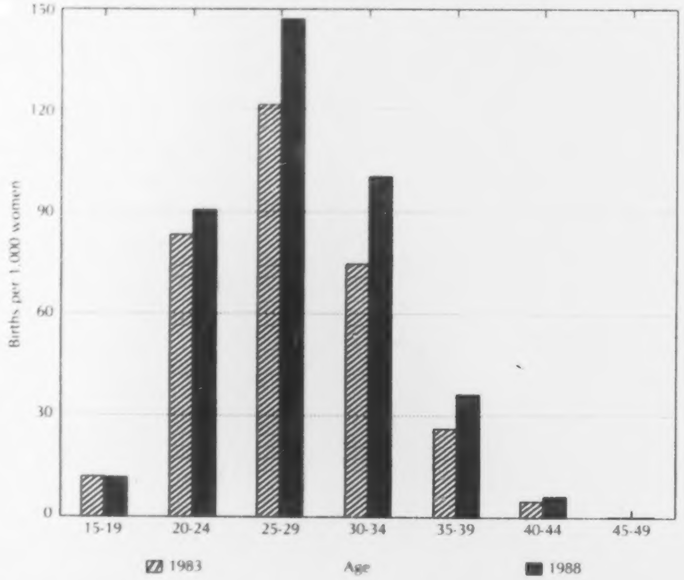
Who would have thunk it? Who would have believed a decade ago that a mythical population island would capture consistent public attention? Who would have believed that *PT* would still be writing about it?

In the same way that this tropical island burst volcanically from the Pacific (as recounted in *PT*'s predecessor *Intercom*, December 1977), so the world's population totals have erupted – 4 billion (back in 1975), 5 billion (1987), 6 billion (projected for 1997), and so on. As they grow older, Populandians will find it routine to be familiarly rubbing shoulders with a world population size that we oldsters would find mind-boggling. But after all, starting around the year 2025 the majority of that world will consist of Populandians.

– Art Haupt

SPEAKING GRAPHICALLY

Sweden's Delayed Fertility in the 1980s



The above bar graphs compare age-specific fertility rates in Sweden for two dates: 1983, when total fertility was 1.6 lifetime children per woman, a decadal low, and 1988, when it had risen to 2.0. Fertility went up for most ages, but particularly for women 25-29 and 30-34 years of age. Futhermore, these women were basically the same women who five years earlier were recording low figures; in retrospect some were simply delaying their fertility and the ultra-low 1983 total fertility rate was not quite the harbinger it may have seemed at the time.

Source: Swedish Central Bureau of Statistics, courtesy of Murray Gendell

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*Educators and students should send supporting documentation.

Celebrating Six Decades of Population

This year PRB celebrated 60 years of telling the world about population issues.

On Oct. 26, PRB celebrated the diamond anniversary of its founding at a banquet in the National Press Club attended by some 250 well-wishers.

At the banquet, Marshall Green received the PRB Award for Outstanding Contributions to Increased Understanding and Awareness of Population Problems. The commendation was presented to him by Richard E. Benedick, Senior Fellow at the Conservation Foundation.

Ambassador Green was the U.S. Coordinator for Population Affairs at the State Department from 1975 to 1979, during which time his negotiations had helped family-planning programs and raised population consciousness around the world. In his speech he saluted the courage of leaders in Asia, Africa, and Latin America who were tackling population issues – an act that he said sometimes entailed deadly risk because of traditionalists, religious zealots, and fundamentalists.

He also praised Ambassador Benedick, who had succeeded him as Coordinator, and acerbically noted that Benedick had been a casualty of the Reagan Administration's policy changes in 1984 that resulted in the Mexico City policy banning U.S. population funding to international organizations involved with abortion.*

Green was also named a PRB Honorary Fellow. Also named Fellows were outgoing members of the Board of Trustees, Jodie T. Allen of the *Washington Post* and Bennetta B. Washington, former Special Assistant to the Assistant Secretary for Employment and Training as well as former Director of the Women's Job Corps, U.S. Department of Labor.

Dr. Richard Berendzen, President of The American University, gave the evening's main address, detailing the difficulties the U.S. is having keeping up with the changing world of the 1980s, which includes population growth and migration shifts in U.S. relations with other countries. Today, Berendzen said, even the "Made in USA" label proudly flaunted in patriotic TV ads is itself made in Taiwan.

Photos by Ed Castle

Wilhelmine Burch Gibboney and PRB President Thomas Merrick.

In this competitive new world we are falling off the pace, he asserted, because of the deficiencies in U.S. education. He pointed out that the U.S. norm of 180 days of schooling a year is paltry compared to the 200 to 240 days annually mandated in other industrialized countries. The amazing, well-documented blind spots in student knowledge (in such fields as geography) are the results.

In the end, however, the problems afflicting education stem from the problems associated with the nuclear family. "The most important education is what is heard at the dinner table," he said.

Recalling the ultimately tragic NASA program to put a teacher in space aboard the space shuttle, he said that "the thing we don't need is a teacher in space. We need them down here." He had met that teacher – Christa McAuliffe, and she told him, "I touch the future" – which meant, she explained, "I teach the children."

Richard Berendzen warned about U.S. education.

Looking Back

One of those present at the 60th anniversary dinner was Wilhelmine Burch Gibboney – the widow of PRB's founder, Guy Irving Burch. She was with Burch in 1929 when he founded PRB as a one-room "schoolhouse" to educate the American public about population issues.

While serving in the U.S. Army in World War I, Burch, a New Mexico native, had been impressed with the magnitude of Europe's population density, and during the 1920s – the pioneering decade for the birth control movement – his absorption in the field and interest in population growth (both rare concerns at the time) solidified.

During succeeding decades the new PRB, supported by Burch out of his own pocket for its first 20 years, distributed population publications and charts to the media. Burch wrote articles appearing in such periodicals as *The New Republic, Current Events,* and *Birth Control Review,* and served as a manpower consultant to the Selective Service. When he died in 1951, he was considered by many people in the field

Continued on next page

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*At present there is a new Acting Coordinator, Bruce Andrus, but no permanent Coordinator has been named by the Bush Administration.

Celebrating Six Decades

Continued from previous page

as a kind of "demographic Paul Revere" who had sounded an alarm about population growth long before it happened.

Following Burch's tenure, PRB continued its informational task under President Robert C. Cook, assisted in part by grants from the Ford Foundation. In the 1960s, when the postwar population explosion reached its peak, PRB's operation increased to a dozen personnel, who produced additional publications and services, including population education, and for some years had a Latin American branch in Bogotá, Colombia.

In the 1980s, PRB enlarged the scope of its operations to include AID-funded international programs, which disseminate policy-relevant research findings to leadership groups in 26 countries, and a new subsidiary, Decision Demographics, to market PRB's research resources to business and government on a for-profit basis.

PRB has come a long way since 1929. It presently makes its home on one floor of a downtown Washington office building, where some 40 employees work in information and education, international programs, policy studies, publications, and administration. Fittingly, one of its latest projects is a forthcoming series of publications for policymakers on the U.S. in the 21st century (see *PT*, July/August 1989).

—A.H.

Ambassador Marshall Green was named an Honorary Fellow.

Portrait of Troubled, Rapidly Growing Sub-Saharan Africa

Sub-Saharan Africa has the highest population growth rate of any region on earth, almost 3 percent annually. But although news and demographic reports emanate from one sub-Saharan country or other, we seldom get a glimpse of the population picture of the region as a whole.

Now, however, PRB's latest *Bulletin*, "Africa's Expanding Population: Old Problems, New Policies," by Thomas J. Goliber, gives a detailed overview of this region in crisis. Gathered together in its pages are wide-ranging data, synopses of the demographic distinctions of various countries (in other reports usually lumped together indiscriminately), and descriptions of the singular trends carrying the region toward an uncertain future.

The 42 variegated nations of sub-Saharan Africa contain 550 million people (divided into some 800 ethnic groups, speaking 1,000 languages and dialects), whose population surge stems from dropping mortality and still-high fertility. The UN projects that nearly a billion people will be added to the region between 1980 and 2025 – a tripling of population in under half a century.

"The effort to develop Africa socially and economically in the face of extraordinary population growth is," Goliber writes, "one of the great unfolding dramas of the modern world."

This *Bulletin* is a successor to Goliber's 1985 *Bulletin*, "Sub-Saharan Africa: Population Pressures on Development," but incorporates new sections and updated information. Among the trends:

- Two geographic belts of especially high fertility run through the region: a western one from Nigeria to Côte d'Ivoire and an eastern one that extends from Sudan down to regions of Zaire and Mozambique. There is also, Goliber writes, a belt of persistently high infertility running across central Africa from Cameroon to Zambia, due to high prevalence of diseases such as genital tuberculosis and gonorrhea.

Africare

Population pressures are increasing on the sub-Saharan region.

- Migration (for employment) and refugee movements (fleeing military strife, most notably in Ethiopia and Mozambique) have resulted in millions of people living in countries other than their own.
- The new *Bulletin* gives a comprehensive status report on AIDS conditions in sub-Saharan Africa, where the deadly disease exists at some of the highest levels in the world. As of mid-1988, some 100,000 AIDS cases were estimated to exist in Africa. This figure for active cases must, however, be considered just the tip of the iceberg, since the number of people *infected* with the AIDS virus but not showing symptoms may be 2 to 3 million.

AIDS levels are highest in a belt of seven countries: the Central African Republic, Zaire, Zambia, Tanzania, Burundi, Rwanda, and Uganda.

AIDS in Africa is a predominantly urban disease. Because it is spread primarily as the result of heterosexual activity, equal numbers of males and females suffer from it. No reliable statistics are available to show how fast the disease is spreading, or what the long-term demographic consequences are likely to be. Although the human cost is severe, computer simulations suggest that the disease will not have significant effect on future population levels in Africa.

Long-term population trends in sub-Saharan Africa do, nevertheless, remain daunting. Present levels of labor surplus, rapid urbanization (some 28 percent of the region is currently urban, projected to be over 50 percent by 2025), and continuing high fertility all are cause for concern.

Economic stagnation during the 1980s prompted many national governments to recognize that rapid population growth might be hindering their socioeconomic development. The region's political climate has shifted away from pronatalist or laissez-faire attitudes toward official policies to slow population growth.

The *Bulletin* details how the policy formation process operates in four countries – Liberia, Nigeria, Zaire, Zambia. The conclusion is that it generally progresses ponderously and is beset with bureaucratic pitfalls. Nonetheless, policy shifts in more and more countries, combined with evidence of increased contraceptive use and fertility downturns in a few countries, give some hope that the region's extraordinary rate of growth may have peaked and will decline in the near future.

A preference for large families and an unmet need for family planning services are two major causes of the region's high fertility. How sub-Saharan Africa copes with these trends during what Goliber sees as the "crucial 1990s" will determine its future. As things stand, if total fertility remains above 6 lifetime children per woman, African population could reach 2.1 billion by 2045.

– A.H.

Copies of the 56-page "Africa's Expanding Population: Old Problems, New Policies," by Thomas J. Goliber, (Vol. 44, No. 3, November 1989), can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling toll free 1-800-877-9881. Visa or MasterCard accepted. Prices are: $7.00 per single copy; 2-10 copies, $6.50 each; 11-50 copies, $5.50 each; 51 or more, $4.00 each. Orders for $50.00 or less must be prepaid. For U.S. orders, include $1.00 or 5 percent (whichever is greater) for postage and handling.

SURVEY REPORT

Honduras

The most recent Honduran national level survey, the Epidemiology and Family Health Survey of 1987 (EFHS), shows varying degrees of progress on a wide range of health and fertility measures in this Central American country of 4.4 million people.

The total fertility rate (TFR) has not changed since 1984, holding at 5.6 average lifetime children per woman. Urban fertility in the Tegucigalpa/San Pedro Sula areas is as low as 3.5 while women in rural areas (where 60 percent of the population lives) are having 6.9 children on average. Average ideal family size is considered to be 3.2 children.

As might be expected, the rates of contraceptive use also vary by place of residence. While 41 percent of married women in Honduras as a whole use contraception (33 percent modern methods), 63 percent of urban women practice contraception, as opposed to only 30 percent of rural women. While prevalence increased almost 30 percent between 1981 and 1984, the increase between 1984 and 1987 was 17 percent.

Interestingly, the earlier increase was due to a rise in use of modern methods (notably pills, IUDs, and female sterilization), while the latter change documents a greater increase in the use of traditional methods.

Pills and female sterilization are the most commonly used methods of contraception. Most women received their pills from ASHONPLAFA, the Honduran family planning association, through clinics or the association's Social Marketing Program. Most sterilizations were performed at private or Ministry of Health hospitals (the latter through an agreement with ASHONPLAFA). While 9 out of 10 sterilized women said they were satisfied with the procedure, almost half of pill ever-users said they had had problems with the method.

Women said that 20 percent of recent pregnancies were unwanted and a similar proportion were mistimed. Half of married women want no more children and an additional 21 percent want to delay the next pregnancy for at least two years. Sixteen percent of married women are estimated to be in need of contraception to avoid an unintended pregnancy.

Infant and child mortality rates have been declining. According to the EFHS, infant mortality declined from 71 deaths per 1,000 live births in 1981 to 49 deaths in 1985. About half of all deaths of children under age 5 are caused by acute respiratory infections and/or diarrheal diseases. Most children who had diarrhea received some treatment, although only 18 percent of those treated received oral rehydration therapy. Immunization of children has been mandatory in Honduras since 1981.

Eighty-six percent of the women received prenatal care during their last pregnancy and about half received a tetanus toxoid injection. Sixty percent of all births take place at home and most are assisted by traditional birth attendants. The average duration of breastfeeding is 17.3 months.

Although urban and more educated women tend to breastfeed for shorter periods, there has been an increase in breastfeeding duration since 1984 with most of the rise found in the urban areas and among younger and more educated women. Such a finding not only indicates the success of recent breastfeeding education campaigns (PROALMA), but also refutes the assumption that modernization must be associated with a decline in the average duration of breastfeeding.

– B.S.

Lyle Saunders (1907-1989)

A pioneer in medical sociology and development of international population policy and programs, Lyle Saunders died at his home in Santa Fe, N.M., on Sept 18, aged 82. His extraordinarily productive and influential career as scholar and adviser was first devoted to the Spanish-speaking people of the Southwestern U.S. and then to efforts to cope with population growth in the Third World.

Born in Kansas, Saunders earned a B.A. at the University of New Mexico before going on to graduate study in sociology and anthropology at the University of Chicago.

While on the faculty of the University of New Mexico, Saunders devoted a number of years to field work with the Spanish-speaking people of Northern New Mexico, working to understand their culture as it influenced their health and medical care. Later, at the University of Colorado (1961-1964), he held a joint appointment in the departments of sociology and preventive medicine.

It was from those fields that he came to population. In 1961, he served as an evaluation consultant to the Indian government's Central Health Education Bureau. Two years later he joined the Ford Foundation's Population Program, where he served for the next 14 years. For the remainder of his career Saunders collaborated with colleagues helping to devise population policies – often from ground zero – and work out strategies for implementing family planning programs in numerous less developed countries.

In his early years at the Ford Foundation, Saunders assisted in the formulation of national population policies in Kenya, Ghana, and Malaysia, at the invitation of local government officials. He also took up residence overseas for extended work with national programs as Advisor to the National Family Planning Board of Malaya in 1967, Program Advisor in Population for Southeast Asia, in Bangkok in 1971, and as the World Bank's Resident Advisor to the Chairman of Indonesia's National Family Planning Coordination Board in 1973.

By virtue of his cultural sensitivity and

Continued on page 10

SOFTWARE

NATASHA is a CD-ROM product that contains 109 research data sets covering the subject of U.S. teenage pregnancy.

Short for National Archive on Sexuality, Health, and Adolescence, NATASHA promises "the best available data" on the causes and consequences of teenage sexual behavior, contraceptive use, pregnancy, pregnancy resolution, and parenthood. It also includes health and other survey data from the Census Bureau, National Center for Health Statistics, and many other sources.

To access these data, NATASHA includes search and retrieval capabilities and study summaries. It also includes SPSS program statements that can be utilized with the widely used SPSS statistical program.

NATASHA requires an IBM PC or compatible with at least 640K RAM, a hard disk, DOS 3.1 or higher, and a CD-ROM drive. Price is $495, which includes one year of free technical assistance. Contact: Sociometrics Corporation, 685 High St., Palo Alto, Calif. 94301, phone 415-321-7846.

– A.H.

POPULATION UPDATE

Estimated United States Population:

As of August 1, 1989	249,019,000
As of August 1, 1988	246,563,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1047.

Estimated World Population:

As of December 1989	5,273,000,000
Annual growth	93,000,000

Extrapolated from the mid-1989 population on PRB's *1989 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: June 1989

	12 months ending with June					
	Number		Rate			
Item	1989	1988	1989	1988	1987	1986
Live births	3,940,000	3,855,000	15.9	15.8	15.5	15.6
Deaths	2,149,000	2,169,000	8.7	8.9	8.7	8.7
Natural increase	1,791,000	1,686,000	7.2	6.9	6.8	6.9
Marriages	2,389,000	2,368,000	9.7	9.7	10.1	10.0
Divorces	1,180,000	1,163,000	4.8	4.8	4.8	4.9
Infant deaths	38,800	38,400	9.9	10.0	10.1	10.5
Population base (in millions)			247.1	244.5	242.2	239.9

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. Monthly Vital Statistics Report (Vol. 38, No. 6) from the National Center for Health Statistics.

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ZERO POPULATION GROWTH
ZPG rates 192 cities on the stress of urban living (Jan. p. 9)

ZIMBABWE
Zimbabwe DHS [Survey Report] (July/Aug. p. 5)

–compiled by Martha Herr

Saunders

Continued from page 6

practical wisdom, Saunders became one of the most sought-after and effective technical assistance practitioners in the population field. He contributed to strategic thinking on the role of the social sciences in population work, helping to shape Foundation programming in this area. He was the author of highly influential papers on the social sciences and population prepared for international conferences, including a monograph published by the Malaysian government in 1972, which developed the concept of attaching a population unit to government planning ministries of less developed countries.

In a 1971 memorandum he suggested a strategy for support of population research by young social scientists in Southeast Asia, enlisting senior scholars in the region to assist them in research design and implementation. This was the origin of successful Southeast Asian Population Research Program (SEAPRAP), which in turn served as a model for the continuing Middle East Awards Program in Population and Development (MEAwards), sponsored by the Population Council.

Saunders is also remembered as a punster, poetry aficionado, and pilot. He is survived by his wife, Maxine, their son and daughter-in-law, Bruce and Laura, their granddaughter, Kate, and by a host of population and health workers around the world who have been guided by his wisdom and delighted by his humanity.

– Oscar Harkavy

Robert Dinkel (1908-1989)

Robert Dinkel, a former vice president and Honorary Fellow of PRB, died Sept. 11 in Greensboro, N.C. at the age of 81.

Dinkel attended Notre Dame University and received his PhD in sociology from the University of North Carolina. He was a professor of sociology at Guilford College, wrote widely on population issues and was a member of the International Union for the Scientific Study of Population (IUSSP). He served as PRB's vice president from 1960 until 1965, and was a member of the Board of Trustees from 1966 to 1968.

– A.H.

TAKE A NUMBER

Queuing Up. Tom Espenshade of Princeton's Office of Population Research writes with the following: "According to PRB's *1989 World Population Data Sheet* the mid-1989 world population was 5.234 billion persons. Moreover, the 1989 UN population estimates and projections volume (i.e., the 1988 assessment) indicates that the annual increment to world population size during 1985-1990 is 88 million.

To make these numbers less sterile and convey a sense of their magnitude, I have made the following calculations.

"If we assume that the average person (including men, women, and children) is 5.28 feet tall (i.e., about 5 feet 3 inches in height), then 1,000 persons laid end to end would equal one mile. The 1989 world population laid end to end would then equal 5,234,000 miles of people. This would:

1. circle the earth 210 times
2. make 22 round trips to the moon
3. reach nearly 6 percent of the way to the sun.

"The line of people would grow by 88,000 miles per year (88 million people divided by 1,000 persons per mile) or by 241 per day.

"Suppose these people were laid out along a smooth and level highway. According to a local bicycle shop owner, this year's winner of the Tour de France, Greg Lemond, would be 'pushing it' to average 24 miles per hour if he rode for 10 hours each day. But riding at this speed for 10 hours a day, 7 days a week, 52 weeks a year is just what he would have to do to keep up with the expanding line of human population."

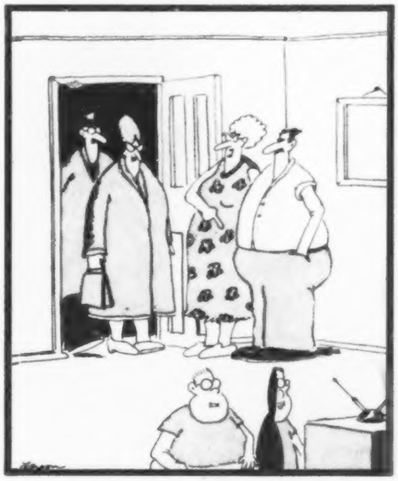
U.S. Metro Growth. The Census Bureau has issued its estimates of U.S. metropolitan areas for 1988, and the series reflects some subtle shifts in growth patterns. The "oil bust" continues to dampen growth in Texas. The Dallas-Fort Worth area grew to 3.8 million, but only added 34,000 from 1987 to 1988, a sharp drop from the 1980-1987 annual average gain of 110,000. Houston-Galveston-Brazoria's growth also remained sluggish.

The slower growth in these Lone Star metro areas could result in the Washington, D.C. area passing Dallas in population size next year to take the Number Eight spot; Washington had recently passed Houston to recover its ranking of ninth. Rapid, even accelerated growth continued in Los Angeles which along with Tokyo is the fastest-growing large city in the industrialized world. The Los Angeles-Anaheim-Riverside metro area grew by over 300,000 in one year and has added 2.3 million population since 1980 to rise to 13.8 million by 1988.

– C.H.

ADDENDA

The Far Side, by Gary Larson



"Bob and Ruth! Come on in. . . have you met Russell and Bill, our 1.5 children?"

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CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C 20005

CHOOSING A CONTRACEPTIVE: Method Choice in Asia and the United States, edited by Rudolfo A Bulatao, James A Palmore, and Sandra E Ward (Published in association with the East-West Center, Honolulu, Hawaii) Boulder, Colo Westview Press, 1989 347 pages

Decisions at many levels – international, national, community, and individual – influence, in concert, observed prevalence rates and method mix Although demographers are familiar with these rates, they have tended to shy away from analyzing how and why an individual makes the ultimate decision to choose a particular method above any others available (or to choose no method)

This relative neglect is understandable; analysis of decision making involves delving into social psychology Furthermore, the sheer complexity of the subject matter and the range of factors to be considered make devising an appropriate framework and statistical analysis a herculean task

This tightly packed volume, developing but distinct from a seminar held in 1985, leads demographers firmly into this relatively uncharted area An introduction sets out the structure and focus of the book and describes the geographical context – Asia and the U.S – where family planning programs have long been established, prevalence is generally high, and quality data sets are available

The various behavioral decision models pertinent to contraceptive decision making are clearly and succinctly reviewed and discussed in a chapter devoted to psychosocial aspects Much of the work quoted has been published in the social-psychology literature, but this book may bring it to the attention of many demographers for the first time Chapters on the role of accessibility, provider perception of methods, and pricing in influencing method choice are also included in the first section, which examines the approaches to the study and analysis of method choice

Asia demonstrates strikingly heterogenous method mixes, providing a rich array of country contexts to analyze method choice Two chapters, one on method mix and one specifically on sterilization in the white population in the U S , are also included These country-study chapters primarily analyze method choice in terms of socioeconomic and demographic characteristics, although one takes a psychosocial, and another an access, focus

An important final chapter presents a suggested framework for analysis, encompassing psychological, sociodemographic, and economic factors An example of multinomial logit analysis is included as an appendix – a useful device, since this is the statistical model utilized in several of the country studies, and not everyone may be familiar with it

The book's aim, to be both "policy relevant and technically sophisticated," is well met In addition, it points the way to much further research, in terms of the micro dynamics of decision making itself, and the role of partners, accessibility, and information provision for increasing congruence between intention to use and actual behavior

At present, decision-making models appear to be better at predicting the former The point where a former set of intentions have been transformed, with varying degrees of success, into actual behavior – the stage captured by demographic surveys – also poses interesting lines of inquiry in terms of elucidating the underlying dimensions of choice, particularly when sociodemographic differentials are evident

In addition, the role of programs in educating, dispelling rumors, and providing information, that is, increasing cognitive access, appears to be a salient area for further research Demographers, academics, policymakers, and program planners will find much to stimulate them in this important and substantial book

– Gwenda Brophy

Books Received

ADDRESS UNKNOWN: The Homeless in America, by James D Wright Hawthorne, N Y Walter de Gruyter, 1989, $36 95

AGE WAVE, by Ken Dychtwald and Joe Flower Los Angeles Jeremy P Tarker, 1989

ATLAS OF MEXICO, by James B Pick, Edgar W Butler, and Elizabeth L Lanze Boulder, Colo Westview Press, 1989

POPULATION AND RESOURCES IN A CHANGING WORLD, by Kingsley Davis, Mikhail [illegible] Berstam, and H M Sellers Stanford, Calif Morrison Institute for Population and Resource Studies, Stanford University, 1989

THE NEW IMMIGRATION: Implications for Poverty, by Leif Jensen Westport, Conn Greenwood Press, 1989

WOMEN AT RISK: The Need for Family Planning Services. New York Alan Guttmacher Institute, 1987

PREVENTING MATERNAL DEATHS, by Erica Royston and Sue Armstrong Geneva World Health Organization, 1989

HAITI

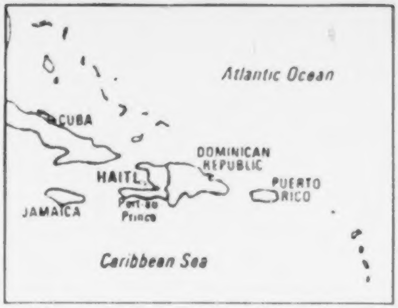
Population (mid-1989 est.): 5.9 million (mostly of African descent)
Land area: 10,714 sq. miles (size of Maryland)
Population density: 551 per sq. mile
Births per 1,000 pop. (1988 est.): 47
Deaths per 1,000 pop. (1988 est.): 16
Rate of natural increase (1988 est.): 3.1 percent
Infant mortality rate (1982-87 est.): 101 infant deaths per 1,000 live births
GNP per capita (1987 est.): $360
Capital: Port-au-Prince

by John F. May

Haiti's recent socioeconomic and demographic evolution contrasts sharply with that observed in the neighboring countries. Today, in nearly all Caribbean countries, life expectancy at birth is almost 70 years, fertility has declined to less than 4 lifetime children per woman, primary school enrollment rates are nearly 100 percent, and contraceptive prevalence rates for modern methods stand at at least 50 percent.

In Haiti, by contrast, expectancy of life at birth is only 55 years, fertility has increased in the past 15 years from 5.5 to 6.4 lifetime children per woman, only 50 percent of primary-school-age children actually attend school, and the contraceptive prevalence rate remains below 10 percent, with no increase in the past 20 years.

Nevertheless, some socioeconomic changes have occurred during the last few decades. A comparison of data from population censuses – 1950, 1971, and 1982 – indicates that primary education now reaches more children and that the urbanization process has continued at a rapid pace, although only 26 percent of the Haitian population lived in cities in 1982.



Infant mortality has declined from 140 in the late 1960s to about 100 per 1,000 live births today. Moreover, despite severe international economic conditions, Haiti has experienced a shift from agriculture to other economic sector activities.

Still, agriculture remains the largest sector of the country's economy – employing 65 percent of the labor force – but with disappointingly low productivity. Acute deforestation has compounded the problem and subsistence agriculture can no longer support the rapidly increasing rural population. Haitian peasants move to the cities, often to end up in filthy slums, or migrate to neighboring countries, as exemplified by the boat-people phenomenon.

The deepening of the agriculture crisis in rural areas (all FAO indices have declined since 1975) has led to massive emigration flows, and since the early 1980s, about 40,000 Haitians are estimated to have left their country each year. It is now estimated that nearly 1 million Haitians live abroad. This huge diaspora has found refuge mostly in the U.S., Canada, and the Dominican Republic, but also in the Bahamas, French Guyana, Guadeloupe, and France.

Fertility has not declined as it did in all neighboring countries, but instead has risen as the result of persistent low contraceptive levels and earlier and increased frequency of unions. This was established by the last three fertility surveys: 1977, 1983, and 1987. Consequently, the rate of natural increase shifted from about 2 percent to a current estimated 3 percent per year. Since the early 1970s, attempts to launch an effective family planning program have failed, partly due to the opposition of particular groups to the very concept of family planning.

Recent population projections made from latest available data indicate that the total population of Haiti could reach between 9.5 and 15.5 million by 2025, depending on various assumptions. Among these, it is projected that mortality conditions will gradually improve, with the expectancy of life at birth increasing to about 67 years by 2025. However, it is not known how the Acquired Immune Deficiency Syndrome (AIDS) epidemic, which spreads in Haiti mostly through heterosexual contacts and mother-to-child transmission, will affect infant, child, and general mortality.

The upcoming sharp increase in the Haitian population will doubtless have dramatic consequences on all sectors, among others on agriculture and the environment. Yet, interest to integrate population variables into socioeconomic planning is emerging and in June 1989 the Government has set up an Inter-Sectoral Committee to draft a population policy statement.

One of the major remaining challenges is to provide Haitian couples with free access to family planning information and services, for which demand is significant according to surveys. This is necessary not only to allow couples to exercise a fundamental human right to plan their families but also to alleviate population pressure on scarce resources. Indeed, the problems of Haiti may soon become a regional issue, namely through uncontrolled Haitian emigration. One may wonder whether neighboring countries are prepared, or willing, to address this crucial issue properly.

Demographer John F. May is Coordinator of Francophone Programs at The Futures Group, Washington, D.C. The author is grateful to Dr. Emmanuel Adé, Executive Secretary of the Conseil National de Population (CONAPO) in Haiti and Jean-Pierre Guengant, ORSTOM/Guadeloupe, for their contribution to this Spotlight.

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POPULATION TODAY

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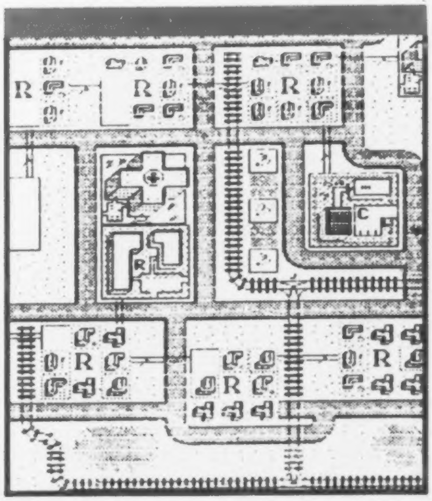

What *SimCity* looks like. (See page 9.)

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FROM THE EDITOR'S DESK

Remember the 1980s? In the population field, it was the tumultuous decade over which the Census Bureau released data from the 1980 Census. It was the decade when demographers' projections moved from mainframe to desktop, when the Mexico City conference took place, when the U.S. Government started funding population programs via continuing resolutions rather than new law. It was the decade when the world reached the half-way point (5 billion) of its projected ultimate population (10 billion). It was the decade when supply-side demography had its day in the sun, the environment issue made a comeback, and the mid-decade census wasn't held again.

But before you wax too nostalgic, remember: *The 1980s aren't over!* Mathematically speaking, the first year of a decade, century, or millenium is a "1" year. 1991, 2001 . . . . So we have another year of the 1980s to go. One more year of Vanna White, yuppies, and aerobics before we can clean the slate and start a new decade fresh.

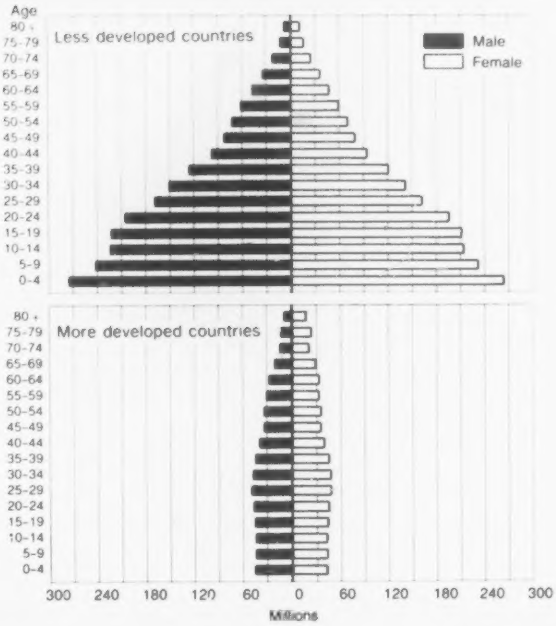
Don't believe it? Think starting a century with "1" is simply a matter of taste? Just recall the absurdity of the old joke, which asked the question: "What did people say in the year A.D. 1?"

Answer: "Yipe, here it is February and I'm still writing Zero on my checks . . . ."

—*A.H.*

SPEAKING GRAPHICALLY

Population by Age and Sex for Developing and Developed Countries: 1989



LDCs dwarf MDCs. These age-sex population pyramids from the U.S. Census Bureau show graphic contrasts. The less developed countries (LDCs) contain 75 percent of world population, versus 25 percent for the more developed countries (MDCs). The LDCs produce 87 percent of the world's births. And there are more people under age 15 in the LDCs than exist at all ages in the MDCs.

Pyramid source: World population Profile: 1989, WP-89

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Census Day Minus 90 and Counting

Suddenly it's 1990—the year of the 21st decennial Census, the bicentennial anniversary of the first U.S. census that back in 1790 counted a nation of 4 million.

Census Day, Sunday, April 1, 1990, a date that once seemed an eternity in the future, now lies about 13 weeks away—90 days.

For most American households the census experience will consist of 15 minutes spent completing the short form that goes to every household. (17 percent of housing units will receive the long form, which contains an additional 45 questions. Long-form respondents will probably spend closer to three-quarters of an hour filling it out.)

For the public, the census is a task that takes a few minutes every 10 years. For the Census Bureau, the sowing and harvesting of census questionnaires is the culmination of a decade of preparation. (See page 6 for a description of the products to come out of this census.) Meanwhile, preparations are already afoot for the 2000 Census.

Old Problems

The 1990 Census is the largest and most expensive national head count ever, tallying up a projected 250 million Americans (compared to 226 million in 1980) and costing $2.6 billion (compared to $1 billion).

Each new census tries to improve the census process and surmount the obstacles inherent in contacting a quarter-billion people residing in 3.6 million square miles. In 1990, the Census Bureau will implement modern technology and try to lessen the undercount (1 percent in 1980) by improving maps, address lists, and outreach programs.

Will they succeed? The following is a status report on the decennial head count at Census Day Minus 90.

During the 1980s, the census also had to overcome unfamiliar obstacles. The 1980 Census generated litigation by localities alleging undercount—an issue of increasing sensitivity in an era when some $39 billion annually in federal aid is geared to population formulas.

U.S. Bureau of the Census

U.S. CENSUS
ENUMERATOR

Enumerators will hand deliver to certain areas.

The Bureau weathered the suits, which began as a blizzard but gradually petered out into, principally, the one brought by New York (both city and state) which was decided in favor of the Bureau, and the multi-district suit that is technically still pending in Federal Court but appears to be moot by now.

A separate suit brought by New York City subsequently had a quite different outcome. It concerned, not 1980, but the upcoming 1990 Census. Under the out-of-court settlement emanating from that suit, the Secretary of Commerce will decide in 1991 whether to adjust this year's census for undercount. (See *PT*, September 1989.) The issues from that unprecedented settlement are still sifting out, and the plaintiffs in the case have indicated that if they cannot accept the Secretary's final guidelines for adjustment, due out in March, they may reopen their suit. (Preliminary guidelines have now been issued for public comment; see next page.)

Other hurdles included objections to the census questionnaire during its development starting in 1984. In 1987 the Executive Branch's Office of Management and Budget objected to the quantity of questions and earmarked 30 for deletion or demotion to the long form. After protests from data users, legislators, and the Bureau itself, the questionnaire survived almost unscathed in time to be submitted to Congress in accordance with law in 1988.

A more recent concern was the race self-identification question, criticized by representatives of Asian-American groups as being incomplete. In response, the Bureau has altered the question so that respondents can now indicate race by the following categories: white, black, Asian or Pacific Islander (with nine specific groups available for the respondent to check off), American Indian (with tribe to be written in), and Eskimo, Aleut, and Other Race (with the Other Race to be written in by respondents choosing that option).

In the summer of 1988, some members of Congress introduced legislation to bar counting of undocumented aliens in the census for the purpose of congressional reapportionment. Such a restriction would have necessitated census questions on the order of, Are you a legal resident? Although banning undocumenteds was considered by Hill watchers to have the avid support of only a few members of Congress, this provision, attached to an immigration reform bill, nevertheless passed the Senate in July. It died in October in the House when that body declined to consider it.

Since early 1989, the census forms and questionnaires have been at the printers. Thus, the time for any further fine tuning has long passed. Perhaps as a reaction to its questionnaire trauma, the Bureau is now publishing a series of 13 *Content Determination Reports* detailing the process that led to the ultimate choice of questions on the 1990 form.

Promotion, Promotion

After nine years of low visibility, the decennial census next year will shift to an instant high-publicity profile with a print and television ad blitz—and exhortative slogans, which as usual

Continued on next page

Census Day Minus 90

Continued from previous page

have a somewhat governmental ring.

For 1990, the nation-wide census slogan will be, "Answer the Census. It Counts for More Than You Think." Other slogans will be aimed at various target groups, though only a sociologist could divine what the government was thinking when it devised "Stand Right Up for Who You Are. Answer the Census" (for blacks); "This Is Our Chance! Answer the Census. Esta es la Nuestra. Participe en el Censo" (for Hispanics); "Any Way We Add It—It Makes Good Sense to Answer the Census" (for Asians and Pacific Islanders); and for American Indians: "Listen to the Drum. Answer the Census. It Counts for Us." —*A.H.*

Undercount Guidelines Are Issued

The Commerce Department has set strict conditions for any potential adjustment of the 1990 Census.

Its proposed guidelines for undercount adjustment were published in the Dec. 11, 1989 *Federal Register*. They will be open to public comment until Jan. 25, 1990; Commerce Secretary Robert A. Mosbacher will issue final rules by Mar. 10, 1990.

Adjustment—long a controversial topic—became a realistic possibility only after the out-of-court settlement last July of a federal suit brought by New York City and State against the Bureau. (See *PT*, September 1989.) That settlement called for appointment of a panel of census experts, who after the census would recommend to the Secretary whether or not to adjust based on the new guidelines.

The proposed guidelines, however, seem to throw high hurdles in front of any adjustment. They require that proponents demonstrate "overwhelmingly" that the count can be improved and that the "rationale" for adjustment "can be clearly and simply stated in a way that is understandable to the general public." —*A.H.*

WASHINGTON WATCH

The first session of the 101st Congress adjourned Nov. 22, but before it ended, a $14.8 billion foreign aid appropriations bill for Fiscal Year 1990 was agreed to by the President and Congress.

Contained in the bill was a $220 million appropriation for the U.S. international population assistance program, an increase of $23 million over the $197 million level for Fiscal Year 1989.

However, the 1990 foreign aid bill became law only after heated debate in both Houses of Congress and a presidential veto. The reason: the abortion issue.

After Congress passed a foreign aid appropriations bill containing a $15 million earmark for the United Nations Population Fund (UNFPA), President Bush vetoed the bill, citing UNFPA's continued involvement with the family planning program of the People's Republic of China, which has been accused of coercive abortion policies. These alleged policies, denied by the Chinese, resulted in withdrawal of U.S. funding from UNFPA programs in 1985—the U.S. had provided about 20 percent of UNFPA's budget in 1984.

In 1985, Congress passed the Kemp-Kasten amendment, which denies U.S. population funding to any organization that, as determined by the President, supports or participates in a program of coercive abortion or involuntary sterilization. This led to the U.S. withdrawal of funding for UNFPA. President Bush stated that U.S. funding of UNFPA as appropriated in the 1990 foreign aid bill would, in his opinion, weaken the Kemp-Kasten amendment and the U.S. international family planning program.

In September 1989, Senator Barbara Mikulski (D-Md.) submitted an amendment before the Senate Appropriations Committee that called on the U.S. to refund UNFPA. The amendment passed in the Committee by a vote of 15 to 12 and was sent to the Senate for consideration. Later that month, the amendment was agreed to in the full Senate by a vote of 52 to 48 and then later in the House of Representatives by a vote of 244 to 178. But the measure was not passed without controversy and bitter debate on the validity of the charges against the Chinese and other abortion-related issues.

After a great deal of legislative activity around the Mikulski amendment, a foreign aid bill containing funding for UNFPA was finally crafted and passed by both Houses of Congress. The President received the bill and vetoed it on Nov. 19 as he had threatened to do in September when the amendment had gained momentum.

Lacking a two-thirds majority needed to overturn a Presidential veto, supporters of the UNFPA funding proposal withdrew the amendment and the foreign aid bill was passed later that week. However, given the level of support shown for refunding UNFPA in this past session, consideration of this issue in the 102nd session of Congress is highly likely.

"Mexico City" Policy Hearing

In 1984, the Reagan Administration announced a new policy which denies U.S. funds to foreign, nongovernmental, family planning organizations that provide abortion-related services or information, even with their own private funds. The "Mexico City" policy, so dubbed because it was announced at the International Population Conference in Mexico City, does not apply to foreign governments.

Last year, in the House Foreign Affairs Committee, Reps. Chester Atkins (D-Mass.) and Olympia Snowe (R-Me.) introduced a bill (H.R. 720) that would negate the Mexico City policy

Continued on page 8

SURVEY REPORT

Bolivia

Fertility continues to be high in Bolivia. By the end of their childbearing years, women have had an average of about 6 children each, although only 5 have survived childhood. Fertility is declining slightly among younger women, according to preliminary results from the recent National Demographic and Health Survey in Bolivia (ENDSA-1989).

The current total fertility rate indicates that the average Bolivian woman will have about 5 children during her lifetime (TFR of 5.1). And the country's fertility rate is significantly higher than for South America as a whole, where total fertility is estimated at about 3.6 children per woman, as of 1989.

With 7.1 million people as of 1989, Bolivia has one of the Americas' lowest national population densities—only Canada and the tiny nations of the Guiana region are less dense. The Bolivian government feels that morbidity and mortality are unfavorably high but that fertility levels are too low.

According to the new survey, however, the majority of Bolivian women do not want more children. Sixty-eight percent of women in union say they want no more children; another 10 percent want to postpone the next birth for at least two years. As might be expected, the percentage of women who want no more children increases with age; however, a surprising 41 percent of women age 15-19, who are just beginning childbearing, say they want no more children.

Despite the overwhelming desire to limit childbearing, only 30 percent of Bolivian women are currently practicing family planning. Only 12 percent of women in union are using a modern method, mostly the IUD (5 percent of women in union) or female sterilization (4 percent), while 18 percent practice traditional methods, mostly periodic abstinence (16 percent).

Inter American Development Bank

Bolivian children miss out on vaccinations.

Lack of knowledge may be an obstacle to contraceptive use for some women, but three-quarters of the women recognized at least one method. Almost 70 percent knew where to obtain a contraceptive method, and 61 percent knew where to find a modern method. The final ENDSA-1989 report will include more discussion of barriers to contraceptive use.

As in many other countries, use of contraception is greater among women in urban areas (40 percent) than rural areas (20 percent) in Bolivia. Contraceptive use also varies by education level. Fifty-three percent of women with a middle or higher level of education are using contraception, as opposed to only 12 percent of those with no education.

Most women using traditional methods get information from friends or family. Private doctors, hospitals, or clinics are the sources most often cited by women for modern contraceptive supplies and services.

ENDSA-1989 also assessed infant and child health in Bolivia. Among children under age 5, some 28 percent had had diarrhea in the two weeks prior to the survey. Few of the children with diarrhea received oral rehydration therapy to counter the dehydrating effects of the illness. An even greater percentage of children showed signs of respiratory illness (cough or difficulty breathing). Thirty-nine percent had a cough in the previous two weeks, and half of these experienced breathing difficulties. Less than one-quarter of the children with a cough received medical attention.

Although many childhood diseases can be prevented by immunization, only a small percentage of Bolivian children have received this protection. Only 20 percent of children under age 5 have health cards documenting their immunization status. Of these children, 63 percent had received vaccination against tuberculosis, 66 percent against measles, 55 percent received three doses of vaccine against polio, and 52 percent received a third dose of vaccine against diphtheria, pertussis, and tetanus.

Maternal health indicators also show a need for more preventive care. Among mothers giving birth in the five years before the survey, only 20 percent had received a tetanus injection. More than half received no prenatal care and only 40 percent received trained medical assistance during delivery.

—B.S.

DEMOGRAPHER'S PAGE

Time to Come To Our Census

By Bryant Robey

Why take the 1990 Census at all? Surely, in general terms, it will only tell us what we already know . . . .

There are two basic reasons. The first one is familiar: The Constitution requires an enumeration of the population every decade to determine how many seats each state will fill in the House of Representatives.

In theory, the constitutional-apportionment requirement could be met by a head count. But there's more to the decennial census than reapportionment.

As long as the government is enumerating the population in every nook and cranny of the nation, the argument goes, it might as well collect useful data about them. So with the passage of time the Census Bureau has been charged by law with a second mandate: to collect and analyze additional statistical data about the population.

A survey would not do the job—not even the Census Bureau's Current Population Survey (CPS), which keeps us up to date about demographic trends in the years between censuses. The CPS, far and away the most massive survey regularly taken in the U.S. (typically there are 54,000 respondents), can provide copious statistical data about the U.S. population as a whole, and with great sampling reliability. But since it only samples bits of the U.S. population from coast to coast, it can tell absolutely nothing about conditions in Orford, N.H.

The 1990 Census will cost taxpayers more than $2.5 billion. Gathering information about people's characteristics presumably helps government serve them better. In this sense, the census may be considered an investment in information.

Census publicity in the coming weeks will describe how the census will be taken, why it is of value, and why it is in everybody's interest to participate. But it is also time to think also about how each of us can benefit from the 1990 Census. In other words, ask not (only) what you can do for your census, but what your census can do for you.

The census provides an ocean of statistics, but most users want only a few drops. (People who use census statistics are known as "data users" or simply "users." These terms suggest a pathological dependence. Most people first sip census data intending only to wet their lips, but they soon return for a larger dose.)

Consider the census as an investment in information

Three Questions

A person who uses census statistics in any quantity should first have an idea of three things: What information does the census provide? For what scale of geographic area is this information available? And equally important, when and in what form is it published? Finally, using census data successfully requires remembering the purpose for which you wanted the demographic data in the first place.

1. What information does the census provide? The census short form that goes to every household in the nation asks seven questions that apply to every person and six that concern housing conditions. Key population questions are about age, sex, family relationship, race, and Spanish origin.

The long-form questionnaire that goes to one out of six housing units asks an additional 19 questions about housing and 26 about population, including education, employment, income, ancestry, commuting patterns, migration, and disability.

Anyone considering using census data should take the time to read the census questionnaire to better understand the source of the data they propose to use.

2. For what geographic scale is this information available? The Census Bureau has divided the country into about 49,000 census tracts, which are the basic census units, each containing about 4,000 people. There are another 11,000 "block numbering areas," similar to census tracts but located outside of metropolitan areas. Within each census tract are up to nine "block groups," which contain census blocks (which in urban areas are city blocks but may be larger and more irregular in shape in less densely settled areas). Statistics from these small census areas are combined to produce summary data for larger areas such as counties, metropolitan areas, and states.

It is important to understand census geographic concepts in order to organize your use of population data. If you are interested in national or regional trends, or want to compare cities, there is no need to examine data for census tracts. But if your interest is in city neighborhoods or supermarket trade areas, you probably will require data at the census-tract or block-group level.

3. When and in what form does the Census Bureau publish the information? Only when you have determined your needs, identified the data that meet these needs, and located the relevant geography does it make sense to plan what products you will order and when. The Census Bureau will publish data in printed reports (an estimate 500,000 pages for the 1990 Census), and on computer tapes, microfiche, and (new for 1990) CD-ROMs. Each format has its advantages and disadvantages. Each user

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IMPACT project

must make an individual decision about which format is best.

Tale of the Tape

Summary Tape Files. In the world of census products, the "STF" is king. These letters stand for "Summary Tape File." There are four such files, (STF 1, STF 2, STF 3, and STF 4). Of these, STFs 1 and 2 contain tabulations from the census short-form questionnaire. STF 3 and STF 4 contain tabulations from the long-form questionnaire. Each file contains at least three subfiles, identified by letters, (for example, STF 1A), which cover different geographic hierarchies.

STF 2 is similar to STF 1 but contains more subject matter detail for race and Hispanic origin. Likewise, STF 4 is similar to STF 3 but with more racial detail. Following the 1980 Census, the Census Bureau released an STF 5, which contained extremely detailed cross tabulations for large geographic areas such as states. Demand for this file was light, and the bureau is not going to produce such a file following the 1990 Census.

Following 1980, the tape product in heaviest demand was one produced as a special tabulation for a consortium of private data companies. This file contained long-form tabulations by ZIP Code. Following the 1990 Census, the Census Bureau will produce a similar file, STF 3B, that contains tabulations from the sample questionnaire for all five-digit ZIP Codes in the country. Such information is of great interest to direct-mail companies and other organizations that keep records of their customers by their mailing address.

Printed Reports. The needs of many census-data users can be met with printed reports. A general rule is that the larger the geographic area, the greater the amount of subject matter detail in a printed report. For small geographic areas, only head counts and basic characteristics are available, lest the publications become over-heavy and burden would-be readers with more detail than they can use.

Census printed reports are prepared from the Summary Tape Files, and they follow a similar organization. There are publications that present short-form tabulations, long-form tabulations, and with both kinds of data. Like the STFs, printed reports are released on a state-by-state basis, and national summaries become available once all of the state reports have been released.

Microfiche. Some detailed area data will also be offered on microfiche (though not in the quantity that was offered in 1980). These data, from selected summary tapes (STF 1A, block statistics from STF 1B, and STF 3A), should be useful for those users without the computer resources required to access the tapes.

In the world of
census products,
the "Summary Tape
File" is king

CD-ROM. For the first time, the Census Bureau will release some tabulations on CD-ROMs, compact disks that can store large data files. When used in special disk drives, CD-ROMs make vast quantities of data accessible to personal computers. CD-ROM products for 1990 will include the Redistricting File, block statistics from STF 1, and Zip Code data (STF 3B), among other files. For further information about this new format, contact the Census Bureau.

When?

Census 1990 products will start coming out in 1991, and by the end of 1993 all of the data products should be out. One potential snag is the Census Bureau's settlement of a law suit by New York State (see *PT*, September 1989). The settlement leaves the door open for after-the-fact adjustment of Census numbers to compensate for undercount. Such an adjustment would affect all data products.

According to the settlement, a decision about whether to adjust census data for undercount will be made no later than July 15, 1991, more than six months after the state-by-state head counts used in reapportioning Congress are required to be submitted to the President.

The Census Bureau reports that it "currently is evaluating" how the settlement may affect the tabulation and publication program. Data users should remain alert to the possibility that the publication schedule is subject to revision.

For further information: Anyone thinking about using 1990 Census data should obtain a copy of the Census Bureau's publication issued in July 1989 titled "1990 Census of Population and Housing: Tabulation and Publication Program," available from the U. S. Government Printing Office (Call the Census Bureau's Customer Services for assistance, 301-763-4100). This key publication contains complete information about the subject matter, geographic detail, and release dates of all proposed census products.

The 1980s have seen many changes in America. Half of all population growth has taken place in just three states: California, Florida, and Texas. More than one-quarter of legal population growth this decade has come from immigration, and half of all new legal immigrants now come from Asia. The 1990 Census will provide the first opportunity to understand in detail the characteristics of these millions of migrants from overseas and among the states. Only the census provides an accurate portrait of the American people, and every census produces its share of surprises. The census countdown continues. Anticipation is in the air.

Washington Watch

Continued from page 4

by calling on U.S. guidelines for funding of family planning programs to be the same for international programs as they are for domestic ones. Currently, domestic programs may fund abortion-related activities with private monies and still receive public funding if the funds and activities are separate.

After a long wait for a Congressional hearing on the bill before the House Foreign Affairs Committee, a spirited debate by House Members and national leaders of the prolife and prochoice communities took place on Sept. 21. Reps. Atkins and Bill Green (R-N.Y.) testified in favor of the bill and Congressman Chris Smith (R-N.J.) spoke against the measure. Organizations that presented testimony included: the U.S. Agency for International Development, National Conference of Catholic Bishops, Office of Pro-Life Activities against the bill, and, in support, Planned Parenthood Federation of America, Population Crisis Committee, Pathfinder Fund, and the International Planned Parenthood Federation, which lost its funding in 1985 because of the policy.

The bill must now be considered by the House Foreign Affairs Committee and the full House and Senate to be made into law. The Bush Administration has already expressed its opposition. But, as with the UNFPA situation, the Mexico City policy promises to be an issue that will be revisited in the next session of Congress.

New Administrator For USAID Nominated

The Administration has nominated a candidate for the post of USAID Administrator following the death of M. Alan Woods in 1989. The candidate is Dr. Ronald William Roskens, president of the University of Nebraska for 12 years and former chairman of the American Council on Education.

Dr. Roskens's international experience includes his service as an Honorary Professor with East China Normal University in Shanghai and participation in educational programs for Afghan children.

The full Senate will have to confirm Dr. Roskens following hearings before the Senate Foreign Relations Committee. Confirmation hearings will probably take place in the first half of 1990.

Dr. Roskens has been an activist in the Republican Party and worked with the Bush Presidential Campaign in recent years.

—*Mark Haskell*

Mark Haskell is international program officer in the Washington, D.C., office of the Population Resource Center. The Center monitors legislative issues of concern to the Population Association of America. Neither the Center nor the Association advocates any particular population policy but works to protect funding for quality demographic research.

Central Cities Continue Slide

Many Americans apparently "know the way to San Jose." That city jumped from 29th in national population rank in 1970 to 12th in 1988. New city population estimates for 1988 were recently published by the U.S. Census Bureau, which releases new city numbers every two years.

In general, the central cities of most metropolitan areas continued to decline or to grow quite slowly during the 1980s. This is even true of many cities in the Sunbelt, the U.S.'s southern tier of relatively swift population growth. From 1980 to 1988, the U.S. population grew by 8.5 percent, the Atlanta metropolitan area grew by 28 percent, but the city of Atlanta itself declined slightly.

Detroit is one city which seems to be manifesting an almost headlong period of population decline, dropping from 1.5 million in 1970 to 1.2 million in 1980. The decrease continued through 1988 and the Motor City is likely to fall below 1 million by 1990. At that rate both Dallas and San Antonio could pass Detroit.

See Take a Number, page 10, for a listing of the largest 50 cities. The table also shows their ranks by overall population size and their annual growth rates.

—*C.H.*

U.S. Policy Discussed

"What is needed is a broad integrated initiative on economic and social development and family planning that would substantially increase the level of assistance to developing countries . . . ."

That was the conclusion of a group of population specialists and others who gathered in Minneapolis Oct. 26-28, 1989, for a regional conference on "U.S. Policy Toward World Population Growth." Co-sponsored by the Hubert Humphrey Institute for Public Affairs at the University of Minnesota the regional conference was the fourth on this topic organized by the American Assembly.

The American Assembly, founded in 1950 by Dwight D. Eisenhower, is a public policy forum affiliated with Columbia University. Its goals are to "provide information, stimulate discussion and evoke independent conclusions in matters of vital public interest."

The Assembly's 1963 report, *The Population Dilemma*, was widely circulated at the time and reportedly helped persuade Congress to fund international population programs for the first time.

The group, while acknowledging that directions of causality between population growth and economic development are not clear-cut, was able to agree that details matter—and that, therefore, population growth may have negative or positive effects in individual countries.

The participants also urged that 1) more development assistance is needed in general, and in particular for maternal/child health and family planning; and 2) more U.S. support should go through multilateral organizations, particularly the UNFPA. The roles of education and improved status of women in reducing population growth were also highlighted.

The sponsors tentatively plan to publish the panel papers. For further conference information, contact: James Vaupel, Humphrey Institute, Center for Population Analysis, University of Minnesota, Minneapolis, Minn. 55455. —*N.Y.*

SOFTWARE

Your Very Own MSA. Every once in a while, a piece of well-designed software comes along that is both educational and enjoyable to use. *SimCity, the City Simulator* will likely be found in the "entertainment" section of your local software store, but it's much more than fun and games.

With *SimCity*, you, the mayor, can design and manage your own city. The city begins as a small village but soon grows into a town, a capital, and, if you're good, a megalopolis. Along the way, you'll learn some valuable lessons in city management.

A successful city depends heavily upon the mayor's ability to ensure a continuous cash flow because the program does not allow deficit spending. Power plants, roads, and mass transit systems are all required in order for the city to grow, but cost money. Raising taxes will raise funds, but may also cause out-migration. Managing the city means treading a fine line between a sufficient tax rate and enough popularity to avoid causing people to leave. (Population growth is seen as a good thing in *SimCity*, as long as it's not too rapid.)

The simulation begins by zoning areas as residential, industrial, or commercial. Houses will appear in the residential zones as the "Sims" move in, warehouses and factories will be built in the industrial areas, and buildings and stores will show up in the commercial districts. Balancing these areas will keep the labor force size and job availability in sync. Early development should leave space for the addition of facilities needed later such as police stations and roads.

The management of commuting and traffic patterns is particularly important. The location of residential and employment zones will result in patterns of "trip generation" which can easily lead to gridlock.

As the city progresses, the mayor becomes busier and busier, checking trends in crime, pollution, population growth, etc. The mayor who feels lucky may gamble—fire stations can be funded at a low level, for example—but many problems will need immediate attention. And, just to keep things interesting, the program will randomly generate natural disasters such as fires, earthquakes, and floods. (These effects can be turned off if desired.)

SimCity provides an enjoyable hands-on experience of urban planning and management. Its use of color graphics is very good and cities are quite detailed. (See page 1.) *SimCity* would make an excellent tool for classes on the urban environment as well as a great holiday gift for that budding city planner on your list.

SimCity lists for $49.95 and is produced by Maxis Software, 1042 Country Club Dr., Suite C, Moraga, Calif. 94556. (415) 376-6434. Versions are produced for IBM and compatibles, Macintosh, and Amiga. The program runs at an acceptable speed on older PC's and the box includes both 5¼-inch and 3½-inch disks.

—C.H.

POPULATION UPDATE

Estimated United States Population:

As of October 1, 1989	249,511,000
As of October 1, 1988	247,039,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1060.

Estimated World Population:

As of January 1990	5,280,000,000
Annual growth	93,000,000

From the mid-1989 population on PRB's *1989 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: July 1989

	12 months ending with July					
	Number		Rate			
Item	1989	1988	1989	1988	1987	1986
Live births	3,946,000	3,874,000	16.0	15.8	15.6	15.5
Deaths	2,150,000	2,169,000	8.7	8.9	8.7	8.7
Natural increase	1,796,000	1,705,000	7.3	6.9	6.9	6.8
Marriages	2,385,000	2,364,000	9.6	9.7	10.1	10.0
Divorces	1,172,000	1,160,000	4.7	4.7	4.8	4.9
Infant deaths	38,800	38,500	9.9	10.0	10.1	10.6
Population base (in millions)	. . .	. . .	247.3	244.7	242.4	240.1

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. *Monthly Vital Statistics Report* (Vol. 38, No. 7) from the National Center for Health Statistics.

TAKE A NUMBER

Population Change in Top 50 U.S. Cities: 1970-88

City and state	Estimate July 1, 1988	Census April 1, 1980	Census April 1, 1970	Rank 1988	Rank 1980	Rank 1970	Average annual change 1988-80	Average annual change 1980-70	Average annual growth rate (%) 1988-80	Average annual growth rate (%) 1980-70
New York, N.Y.	7,352,700	7,071,639	7,895,563	1	1	1	34,068	-82,392	0.47	-1.10
Los Angeles, Calif.	3,352,710	2,968,528	2,811,801	2	3	3	46,568	15,673	1.48	0.54
Chicago, Ill.	2,977,520	3,005,072	3,369,357	3	2	2	-3,340	-36,429	-0.11	-1.14
Houston, Tex.	1,698,090	1,595,138	1,233,535	4	5	6	12,479	36,160	0.76	2.57
Philadelphia, Pa.	1,647,000	1,688,210	1,949,996	5	4	4	-4,995	-26,179	-0.30	-1.44
San Diego, Calif.	1,070,310	875,538	697,471	6	8	14	23,609	17,807	2.43	2.27
Detroit, Mich.	1,035,920	1,203,369	1,514,063	7	6	5	-20,297	-31,069	-1.82	-2.30
Dallas, Tex.	987,360	904,599	844,401	8	7	8	10,032	6,020	1.06	0.69
San Antonio, Tex.	941,150	785,940	654,153	9	11	15	18,813	13,179	2.18	1.84
Phoenix, Ariz.	923,750	789,704	584,303	10	9	20	16,248	20,540	1.90	3.01
Baltimore, Md.	751,400	786,741	905,787	11	10	7	-4,284	-11,905	-0.56	-1.41
San Jose, Calif.	738,420	629,402	459,913	12	17	29	13,214	16,949	1.94	3.14
San Francisco, Calif.	731,600	678,974	715,674	13	13	13	6,379	-3,670	0.90	-0.53
Indianapolis, Ind.	727,130	700,807	736,856	14	12	11	3,191	-3,605	0.45	-0.50
Memphis, Tenn.	645,190	646,170	623,988	15	14	17	-119	2,218	-0.02	0.35
Jacksonville, Fla.	635,430	540,920	504,265	16	22	26	11,456	3,666	1.95	0.70
Washington, D.C.	617,000	638,432	756,668	17	15	9	-2,598	-11,824	-0.41	-1.70
Milwaukee, Wis.	599,380	636,298	717,372	18	16	12	-4,475	-8,107	-0.72	-1.20
Boston, Mass.	577,830	562,994	641,071	19	20	16	1,798	-7,808	0.32	-1.30
Columbus, Ohio	569,570	565,032	540,025	20	19	21	550	2,501	0.10	0.45
New Orleans, La.	531,700	557,927	593,471	21	21	19	-3,179	-3,554	-0.58	-0.62
Cleveland, Ohio	521,370	573,822	750,879	22	18	10	-6,358	-17,706	-1.16	-2.69
El Paso, Tex.	510,970	425,259	322,261	23	28	45	10,389	10,300	2.23	2.77
Seattle, Wash.	502,200	493,846	530,831	24	23	22	1,013	-3,699	0.20	-0.72
Denver, Colo.	492,200	492,694	514,678	25	24	24	-60	-2,198	-0.01	-0.44
Nashville-Davidson, Tenn.	481,400	455,651	426,029	26	25	32	3,121	2,962	0.67	0.67
Austin, Tex.	464,690	345,890	253,539	27	42	56	14,400	9,235	3.58	3.11
Kansas City, Mo.	438,950	448,028	507,330	28	27	25	-1,100	-5,930	-0.25	-1.24
Oklahoma City, Okla.	434,380	404,014	368,164	29	31	37	3,681	3,585	0.88	0.93
Fort Worth, Tex.	426,610	385,164	393,455	30	33	33	5,024	-829	1.24	-0.21
Atlanta, Ga.	420,220	425,022	495,039	31	29	27	-582	-7,002	-0.14	-1.52
Portland, Ore.	418,470	368,146	379,967	32	35	36	6,100	-1,182	1.55	-0.32
Long Beach, Calif.	415,040	361,496	358,879	33	37	40	6,490	262	1.67	0.07
St. Louis, Mo.	403,700	452,804	622,236	34	26	18	-5,952	-16,943	-1.39	-3.18
Tucson, Ariz.	385,720	330,537	262,933	35	45	53	6,689	6,760	1.87	2.29
Albuquerque, N.M.	378,480	332,336	244,501	36	44	58	5,593	8,784	1.58	3.07
Honolulu, Hawaii(1)	376,110	367,878	324,871	37	36	44	998	4,301	0.27	1.24
Pittsburgh, Pa.	375,230	423,960	520,089	38	30	23	-5,907	-9,613	-1.48	-2.04
Miami, Fla.	371,100	346,681	334,859	39	41	42	2,960	1,182	0.83	0.35
Cincinnati, Ohio	370,480	385,410	453,514	40	32	30	-1,810	-6,810	-0.48	-1.63
Tulsa, Okla.	368,330	360,919	330,350	41	38	43	898	3,057	0.25	0.89
Charlotte, N.C.	367,860	315,474	241,420	42	47	60	6,350	7,405	1.86	2.68
Virginia Beach, Va.	365,300	262,199	172,106	43	56	77	12,497	9,009	4.02	4.21
Oakland, Calif.	356,860	339,337	361,561	44	43	39	2,124	-2,222	0.61	-0.63
Omaha, Nebr.	353,170	314,255	346,929	45	48	41	4,717	-3,267	1.42	-0.99
Minneapolis, Minn.	344,670	370,951	434,400	46	34	31	-3,186	-6,345	-0.89	-1.58
Toledo, Ohio	340,760	354,635	383,062	47	40	34	-1,682	-2,843	-0.48	-0.77
Sacramento, Calif.	338,220	275,741	257,105	48	52	55	7,573	1,864	2.48	0.70
Newark, N.J.	313,800	329,248	381,930	49	46	35	-1,872	-5,268	-0.58	-1.48
Buffalo, N.Y.	313,570	357,870	462,768	50	39	28	-5,370	-10,490	-1.60	-2.57

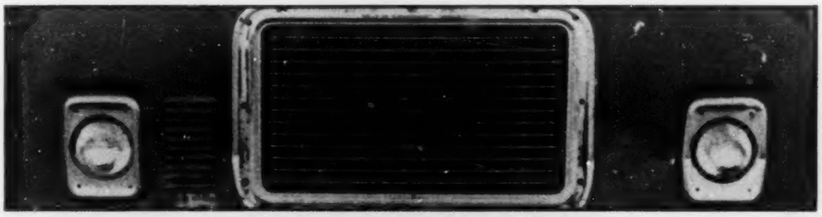
Note Data refer to city proper, not metropolitan areas.

Source U.S. Census Bureau press release 89-182, Nov. 22, 1989.

ADDENDA

It would take 300 to 350 tractor-trailers, full to the gills, to haul 1990 Census short forms to the mail box.

Source U.S. Census Bureau.



CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

POPULATION TRANSITION IN INDIA, Volumes I and II, edited by S.N. Singh, M.K. Premi, P.S. Phatia, and Ashish Bose. New Delhi: P.R. Publishing Corporation, 1989. 506 pages (Vol. I), 404 pages (Vol. II).

The Indian Association for the Study of Population, hosts of the 21st International Conference of the IUSSP held in New Delhi in September 1989 (see *PT*, November 1989), produced a two-volume collection to supplement the usual IUSSP materials. *Population Transition in India* consists of papers presented at the South Asian Regional Conference on Population and Development that took place just prior to the full IUSSP session.

The South Asian conference took as its goal "[giving] scholars in South Asia and in particular, scholars from Afghanistan, Bangladesh, Bhutan, Maldive Islands, Nepal, and Sri Lanka [an opportunity] to interact with Indian scholars and promote the cause of population studies and research."

The 78 papers in two volumes cover the full range of demographic topics: population and development; fertility and family planning; mortality and child survival; data and modeling; the upcoming 1991 Indian census; migration and urbanization; historical demography; and religion and language. While suffering a bit from uneven quality—a common problem with anthologies—this set offers students of Indian demography a valuable and comprehensive reference tool.

—Nancy Yinger

ATLAS OF MEXICO, by James B. Pick et al. Boulder, Colo.: Westview Press, 1989. 367 pages, 133 maps. $55.00 paperback. ISBN 0-8133-7695-5.

As concern grows over America's role as a safety valve for Mexico's burgeoning population, U.S. scholars and policymakers have devoted an increasing amount of attention to demographic trends south of the border.

This atlas is well suited to their purpose, providing ample demographic and economic data presented in simple, understandable maps. Though some of the 133 black and white maps are poorly reproduced, they reveal spatial patterns which otherwise lie obscured in cumbersome charts and tables. Several sets of maps focus specifically on states bordering the U.S., but most cover all of Mexico at a standard size and scale.

Separate sections of the atlas cover population and urbanization; marriage, fertility and family planning; migration; mortality and health; population economics; social characteristics; the economy; and transportation and communication. Map themes range from sex and dependency ratios by state to the percentage of households using the kitchen as a bedroom.

Although the maps and graphics are low-budget and the supporting text is more descriptive than analytical, one might hope that the long suit of such a specialized atlas would be ti[illegible] data. Unfortunately, this is not the case.

Most of the maps are based on 1980 Census data; maps in the marriage, fertility and family planning section are supplemented with 1976-1977 World Fertility Survey data. It is unclear why the results from the 1987 Demographic and Health Survey were not used instead.

—A. de S.

COUNTING AMERICA: The Story of the United States Census, by Melissa Ashabranner and Brent Ashabranner. New York: Putnam, 1989. 101 pages. $14.95 hardback. ISBN 0-399-21747-9.

In this book for young people age 10-14, the Ashabranners give a historical view of census taking and bring the reader up to date as the U.S. prepares for its 21st decennial census.

Counting America tells the census story using photographs, historical drawings, actual census documents, cartoons, and colorful anecdotes. The authors discuss the historical origins of the decennial census, its constitutional mandate, political purpose, development, and changes in questions and collection methods between 1790 and 1990.

The bulk of the book, however, is devoted to the looming 1990 Census. The authors describe the preparation process from the planning of the census questionnaire to the training of the census enumerators to promotion and education. The expected problems—the undercount and whether to include undocumented aliens in the tally—are also outlined, as well as discussion of the methods used to process the tidal wave of data produced by any census, and the uses that come out of it.

Counting America is an excellent source for young people to learn about their country's census.

—Kimberly Crews

SPOTLIGHT

TURKEY

Population (1989 est.): 55.4 million
Land area: 296,185 sq. miles
Births per 1,000 pop.: 30
Deaths per 1,000 pop.: 8
Rate of natural increase: 2.2 percent
Total fertility rate: 3.7
Infant mortality rate: 81
Life expectancy at birth: 64 years
GNP per capita: $1,200
Capital: Ankara

By Wendy Patriquin

Straddling the frontiers of Europe and Asia, Turkey is a former part of the Moslem Ottoman Empire that became a republic in 1923.

Ethnically, Turkic people constitute over 90 percent of the population. The contemporary history of the country has been the emergence of Turkey as a modern nation-state that has become ethnically more and more Turkic. The heterogeneity of the country's population has decreased during the 20th century, with minority groups such as Greeks being repatriated to Greece, the Armenian ethnic group being supressed or emigrating, and various non-Turkic Moslem groups being assimilated.

Some 99 percent of the people are estimated to be Moslem. Turkey repealed Moslem family law in the late 1920s, in an effort to modernize and become more like its western neighbors in Europe. There is no official state religion.

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Istanbul
Ankara
TURKEY
IRAN
GREECE
CYPRUS
SYRIA
IRAQ
Mediterranean Sea
LEBANON
ISRAEL

U.S. Dept. of State

The largest minority group, the Kurds, makes up about 6 percent of the population, largely in the southeastern portion of the country, near the Syrian and Iraqi borders. There has been strife between this group and the national majority.

Immigration, both internal and international, is Turkey's most prominent demographic issue. Since the early 1950s, the constant flow from rural to urban areas has changed the population distribution of the country. Emigration to West Germany during this period has served as a source of employment (there are an estimated 1.5 million Turks in West Germany as of 1988) and provided significant revenue in the form of money sent home. Immigration to Turkey has consisted primarily of an estimated 154,000 ethnic Turks from Bulgaria after World War II and from other East European countries which have come under Communist rule.

It is estimated that almost half the labor force still works on the land, although agriculture is losing its preeminence as industry, particularly manufacturing, expands. Tourism is one of Turkey's fastest growing economic sectors.

Turkey's government followed a pronatalist population policy until 1965, an echo of the large number of casualties in World War I and the War of Independence (1920-1922). A law enacted in 1965 allowed personal freedom in choosing the number of births and legalized contraception. Subsequent development plans incorporated increased numbers of family planning service programs.

According to a survey taken in 1983, women in the east and southeast have more children than women in the western part of Turkey. The abortion rate is higher among western women. Of all married women surveyed, 91 percent knew of one modern method of contraception, while 62 percent said they were using some method.

As in many countries, the level of a woman's education is positively related to contraceptive use. Eighty-two percent of married women with a secondary education or greater were using contraception, while only 46 percent of illiterate women were. As far as a desired family size is concerned, 50 percent of women wanted only 2 children, while 25 percent of those survey wanted at least 3 children.

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POPULATION TODAY

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Art Haupt

Giant rolls of uncut census forms. (See page 3.)

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FROM THE EDITOR'S DESK

Even as *PT* reported last month on the population decline in many major American cities (January 1990, pages 8 and 10), we were reminded just how humbly these metropolises began.

As recently as 1789, New York City occupied only the very tip of Lower Manhattan and was so small that Wall Street was part of Midtown and a contemporary map included a scale given in feet. A north-south road labeled "to Boston" coursed through empty farmland that would someday be the East Village. In that Constitutional year the Empire City, already the nation's largest, had a population of about 33,000, up from 4,375 in 1703.

Tables from the Colonial 1703 Census give the names of the "Masters of Familys" and offer a singular peek into the culture—not to mention spelling—of the time. The printer's term "Sic" (meaning this-is-no-typo-honest!) should also be placed by each of the following respondents, typical of their day: ffrans Vandyck, Wm Proovoost, Allebertuz Ringo, and some comparatively straightforward ones such as Tobias Stoutenbrough, Cornelia Vandervoers, and Anthony Farmer.

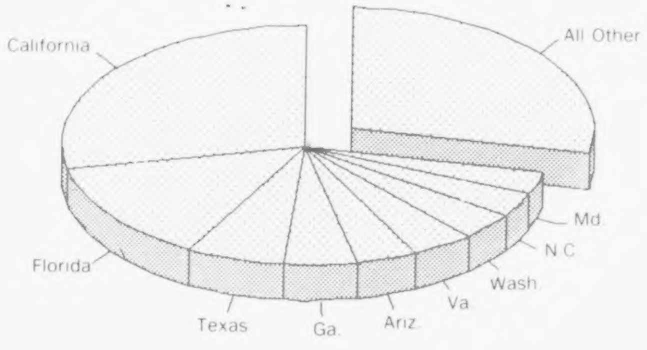
Boston, the most populous city during most of the pre-Independence era, was then 99-percent an island, connected to the Massachusetts mainland by the most slender of isthmuses. Because of energetic landfill projects since then, the shape of Boston has changed almost beyond recognition.

Finally, an enumeration of Philadelphia in 1749 (2,076 houses counted) was conducted by "citizens of the first respectability." Mulberry ward was counted by one Dr. Franklin.

—Carl Haub

SPEAKING GRAPHICALLY

States with the Most Population Growth: 1985-1988



California and Friends. The U.S. population rose by 9.5 million from 1985 to 1989—a 4.0 percent gain—but the increase was a pie divided up mostly by California and a handful of other states (see figure). The Golden State alone accounted for more than one-quarter of U.S. growth. It and eight other states were the heftiest gainers, each swelling by at least 300,000 people. Collectively, the nine accounted for nearly three-quarters of the nation's population growth during the period.

Source: U.S. Census Bureau press release CB89-204.

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Recycled Paper

1990 Census Forms Ready to Roll

It's too late to turn back.

In California, Maryland, and Utah, hundreds of truckloads of census questionnaires are being assembled for mailing (see below). The hiring of hundreds of thousands of temporary workers for the spring's tabulation and follow-up operations has been launched. Meanwhile, litigious strife lurks in the shadows, as usual.

In short, it's a typical decennial census year. And April 1, 1990—Census Day—is now only two months away.

The TIGER address lists, which locate housing units coast to coast, have been completed—which is fortunate, because the census is primarily a mailing operation.

The next step is staffing the 484 temporary district offices scattered around the country. Each office has half a dozen or so management, and the hiring of these managers is reportedly going well.

Each district office will also require some 600 to 950 field employees (earning $5.00 to $8.00 per hour) and 175 to 450 clerical workers (earning $4.50 to $7.00 per hour). Hiring for these temporary staff positions—the foot soldiers of the census—is at a very early stage, with testing of job applicants yet to begin. There is still time, because these 300,000 workers will be needed mostly in the post-Census Day stage, when census forms are logged in and follow-ups are conducted.

The Census Bureau is paying higher rates in areas with high living costs, such as New York City. If you'd like to work in the census, call telephone information for the phone number of the temporary district office nearest you, or contact your state employment office.

On the Legal Front

Meanwhile, the complications over census adjustment are far from over. The Commerce Department is now receiving comments from the public concerning the adjustment guidelines issued last December (see *PT*, September 1989 and January 1990).

The census advisory board, left to right: seated, Eugene Ericksen, John Tukey, and Lance Tarrance; standing, Kirk Wolter, Leobardo Estrada, Michael McGehee, and Ken Wachter. Not shown, William Kruskal.

Any decision to adjust will be made by Secretary of Commerce Robert A. Mosbacher, whose department includes the Bureau of the Census. He will give due consideration to recommendations made individually by the special advisory panel on census adjustment, appointed in September 1989 as part of the out-of-court settlement of the New York suit.

For the record, the members of the Secretary of Commerce's adjustment advisory board are:

Eight-member panel studying thorny issue of census adjustment

- Eugene R. Ericksen, Professor of Sociology, Temple University.
- Leobardo F. Estrada, Associate Professor, Graduate School of Architecture and Urban Planning, University of California at Los Angeles.
- William Kruskal, Ernest DeWitt Burton Distinguished Service Professor of Statistics, University of Chicago.
- J. Michael McGehee, President, McGehee and Associates.
- V. Lance Tarrance, Jr., Chief Executive Officer, Tarrance Associates.
- John W. Tukey, Professor of Statistics Emeritus, Donner Professor of Science Emeritus, Princeton University.
- Kenneth Wachter, Professor of Demography and Statistics, University of California at Berkeley.
- Kirk M. Wolter, Vice President, A.C. Nielsen Company.

Under terms of the settlement, four of the panelists were named by Commerce from a list of seven submitted by the New York plaintiffs. The other four were Commerce's choice.

The four panelists chosen from the names on the plaintiffs' list are Ericksen, Estrada, Tukey, and Wolter, while Commerce's choices were Kruskal, McGehee, Tarrance, and Wachter.

Co-chaired by Ericksen and Tarrance, the panel has contributed input to the Commerce Secretary's adjustment guidelines, to be issued in final form Mar. 10, 1990, after the public has had a chance to comment. And they will be active for a long time after Census Day, during the period when the census totals are processed and a postenumeration survey taken.

The panelists' recommendations as to whether to adjust the 1990 Census for undercount will be issued individu-

Continued on next page

Census Day

Continued from previous page

ally (the panel as a body will not issue a collective recommendation), sometime before July 15, 1991, when the Secretary makes his decision.

Questionnaire Status

Meanwhile, over 100 million questionnaires are being readied. Each packet consists of five elements: outer envelope, questionnaire (printed on custom-made quality paper for reliable machine reading), instruction guide, "motivational insert," and first-class business reply envelope. The resulting printing job is so huge and so expensive that many contractors and subcontractors are involved. For the short form alone, 5,000 tons of paper and 2,700 pounds of ink will be needed, and the printer's bill will be $18 million.

To reach respondents, each form will have its unique destination address (from the Census Bureau's TIGER address list) printed directly on the back, visible through the window envelope. Each questionnaire will also carry a unique bar code to enable personnel in the seven regional processing centers to check in forms instantly as they arrive in the mail, and determine by process of elimination, what addresses have not yet responded and require follow-up. (Later, during processing at the seven national processing centers, the machines that "read" respondents' answers off questionnaires are incapable of reading individual names and addresses, and only record the census block from which the data came.)

The short form will ultimately enter the postal system from two points of origin: Frederick, Md., and Clearfield, Utah. The thicker long form, which includes an additional 16 pages of questions saddle-stitched inside, goes to 17 percent of households and will be mailed from San Bernardino, Calif.

The finished census forms will be boxed in order, the boxes placed in order on forklift pallets, which themselves will be carefully ordered by destination. In early February the Postal Service will start taking delivery of the pallets at the Bureau's loading docks, following a massive timetable specifying exactly which pallets go where, and when. The mailout will get thrifty bulk rates (the mailback goes first-class). Total mailing costs should be about $25 million. And if all goes well, on or about the target date of Friday, Mar. 23, when Americans open their mail boxes, out will fall a census packet.

Of the 97 million addressed questionnaires, about 88 million will be mailed, to be filled out and mailed back. Another 11 million, destined for rural areas, will be hand delivered by enumerators for respondents to mail back.

The remaining 6.5 million households will receive questionnaires hand-delivered by enumerators scouting for addresses not already on the Bureau's address rolls. The Census Bureau is out to find everyone. *—A.H.*

Viet Nam's Fertility Falls

Viet Nam, the world's 13th most populous country since its unification, recently shed some light on its demography with the release of new survey data. The 1988 Demographic Survey of Viet Nam indicates that the birth rate has been falling steadily over the past decade, although the precise level of fertility is less clear. The landmark survey estimates that fertility fell from a total fertility rate of about 5 lifetime children per woman in the late 1970s to about 4.1 in 1987. Vital rates were put at 31 to 34 births per 1,000 population in 1989 and the death rate was estimated at 7 to 8.

Assuming these parameters are correct, the country's population would be 68 million by 1989 and the growth rate would be about 2.4 to 2.6 percent per year. The government's goal had been to reduce the growth rate to 1.9 percent by 1990, a target that is clearly unattainable. Further, the expense of maintaining an effective family planning program is proving to be a major obstacle in an economy which has suffered badly since 1975. *—C.H.*

Conference To Chart Population's Impact

Designed to help policymakers and planners understand coming U.S. demographic shifts, "America in the 21st Century" is an all-day conference to be held in Washington, D.C., on Thursday, Mar. 29, 1990.

Organized by the Population Resource Center, the conference is part of a joint project of the Center and the Population Reference Bureau, and is sponsored by a grant from the Ford Foundation.

In the morning, the meeting will feature discussions by public and private sector leaders on the policy choices that U.S. demographic trends pose for the 21st century. Sessions held that afternoon will focus on specific facets of these trends and their interrelationships: "Correcting the Mismatch: People and Jobs"; "Supporting America's People" in terms of social and economic support systems; "How Firm the Foundation?" concerning future infrastructure needs; "Our Environmental Challenge"; "Governing in the 21st Century"; and "The U.S. and the Changing World."

Led by a total of 24 experts, the concurrent sessions are based on PRB's continuing series of "21st Century" reports. The conference's plenary forum will be moderated by journalist Hodding Carter. Keynote presentations will be made by former San Antonio mayor Henry Cisneros and Maurice F. Strong, President of the World Federation of United Nations Associations.

Registration for "America in the 21st Century" is $150 through Mar. 1 ($175 thereafter), which includes lunch and the complete "21st Century" publication series. To obtain further information or to register, contact: Shelley Kossak, Director of Domestic Programs, Population Resource Center, 1725 K St., N.W., Suite 1102, Washington, D.C. 20006. Phone (202) 467-5030. *—A.H.*

SURVEY REPORT

Mexico

With 87 million people, Mexico is now more than one-third as populous as the U.S., and ranks as Latin America's second most populous country, after Brazil. Since 1972, when President Luis Echeverria Alvarez made a dramatic policy about-face and announced support for a strong national population policy, the government has actively promoted provision of family planning services.

In large part due to favorable economic and social conditions as well as tacit acquiescence by the Church, Mexico's top-down, government-initiated approach to family planning has had considerable impact on fertility in the last decade. The results of the 1987 National Survey of Fertility and Health (ENFES) show that from 1973 to 1986, the total fertility rate (TFR) declined from an average 6.3 lifetime children per woman to 3.8. Urban rates were cut in half, while rural rates declined by one-quarter.

Knowledge and use of contraceptives has risen considerably. Ninety percent of females know of the pill, and in the 10 years between 1976 and 1986, use of modern contraceptive methods nearly doubled, from 23 percent to 45 percent. Interestingly, the composition of contraceptive use also changed significantly over the same period: The pill has declined significantly as a proportion of all methods used, whereas female sterilization has shot up to first place—from 9 percent of all methods in 1976 to 36 percent in 1986. IUDs have held steady at roughly 18 percent, making them currently the second most popular form of contraceptive.

The reason for the relative increase in sterilizations is the number of older women who decide to stop bearing children after their fourth or fifth child. A rise in the percentage of women who obtain services from hospitals and health clinics (where sterilizations are available) rather than pharmacies has also been noted.

FAO/F. Botts

Mexico's new generation.

Of those women who have been sterilized, 25 percent had health problems that they attributed to the operation. The highest percentage of "unsatisfied customers" was in the 25-34 age group, 12 percent of whom wished they hadn't received the operation. Reasons cited were the desire for more children (43 percent), physical problems (20 percent), and the fact that they hadn't wanted the operation in the first place (20 percent).

Contraceptive prevalence rates mirror changes in desired family size. Women aged 15-19 who are entering their reproductive years plan to have an average of 2.6 children, whereas women near the end of their reproductive years expect to have 4.

Sixty-two percent of women with no schooling wish to stop childbearing, as compared with only 49 percent of women with secondary schooling. This seemingly anomalous result is most likely a statistical artifact related to differences in the ages of the two groups; as education has spread, women with no schooling tend to be older and have higher parity. Interestingly, although they may wish to stop childbearing, they are 10 times less likely than their more educated counterparts to use modern contraceptive methods.

Infant mortality rates (IMR) have declined from 85 to 47 infant deaths per 1,000 live births between 1970 and 1987. In part this trend is a result of several factors: a decline in high-parity births, an increase in spacing between births, and fewer births among women in their teens and 40s. The ENFES data show that fourth- through sixth-parity infants have IMRs half again as high as first-borns (42 and 60, respectively). Similarly, birth intervals of less than two years produce IMRs almost twice as high as those of two years or more (81 and 44, respectively).

Sixty-seven percent of the women interviewed received prenatal care from a doctor. The percentage is much higher among urban and highly educated women.

Breastfeeding exhibits the tendency found in most other countries, with the rural poor demonstrating a greater propensity to breastfeed than urban dwellers. Nevertheless, the overall percentage of women who nursed their children was relatively high—ranging from 80 to 90 percent for the various age and educational groups.

—A. deS.

DEMOGRAPHER'S PAGE

A Short History of U.S. Policy Toward Illegal Immigration

by Thomas J. Espenshade

By definition, the United States did not have illegal immigration before 1875. Prior to that year, anyone who wanted to come here could. The only regulation (implemented in 1820) required ship captains to keep manifests of alien passengers arriving at U.S. seaports.

In 1875, exclusion of certain groups became law. Later, in 1921, numeric restrictions on immigration totals were imposed for the first time. Today, at least 33 specified grounds for exclusion are embodied in U.S. immigration law. These include involvement in criminal, immoral, or subversive activities; physical or mental handicaps; and economic factors that suggest migrants would be a drain on the welfare system or would compete unfairly with American workers for jobs. In addition, some migrants who enter the country legally may later become illegal immigrants if they abuse the terms of their visas.

As laws tightening entry into the United States have multiplied, so too have the number of illegal aliens apprehended within U.S. borders. These two trends have tended to go hand in hand. The legal apparatus expanded the criteria by which persons were considered to be in the country illegally, thereby putting more people at risk of being apprehended. But perhaps more importantly, the perceived growth in the number of illegal aliens residing in the United States revealed the inadequacy of previous legislation to contain the situation and gave rise to new demands to "do something" about the problem. The interplay between these two forces is briefly sketched in this article.

The Early Years

Legislative and policy concerns over illegal immigration to the United States have only recently become centenarians. During the last quarter of the 19th century, rising numbers of European immigrants coincided with changes in the composition of immigrant streams. In little more than a decade, the majority proportions shifted from Northern and Western Europe to Southern and Eastern Europe, prompting Congress to respond with a variety of measures aimed at controlling entry into the country.

In 1875, Congress passed this country's first exclusion law, which barred convicts and prostitutes from U.S. shores. The Chinese Exclusion Act was passed in 1882 prohibiting the immigration of Chinese laborers to the United States. Concerns about illegal immigration were reflected in laws enacted in 1888 and 1891 that permitted first the deportation of workers and later the expulsion of any aliens who had entered the country illegally.

Coincidentally, 1891 also marked the creation of the Bureau of Immigration—the forerunner of today's U.S. Immigration and Naturalization Service (INS). By 1904 it became apparent that the Chinese Exclusion Act was not fulfilling its intended purpose, and the Commissioner-General of Immigration assigned a small group of mounted inspectors to patrol the southern border to halt the smuggling of Chinese laborers through Mexico.

During the early part of the 20th century, Congress expanded its control over immigration policy by introducing the first numerical restrictions on immigration. Measures passed in 1921, 1924, and 1929 were designed not only to restrict overall immigration but also to limit immigration from certain areas. Quotas were imposed that based immigration from each country on the share of the U.S. population having similar ancestry.

These "national-origin quotas" had the effect of discriminating against Asians and immigrants from Southern and Eastern Europe and were not lifted until 1965. In addition, these quantitative limitations, combined with the outbreak of the Mexican Revolution in 1910, served to intensify illegal migration. To counter this, the U.S. Border Patrol was created in 1924 as the uniformed enforcement arm of the INS, responsible for guarding the U.S.'s 6,000 miles of land borders against the influx of undocumented immigrants. Statistics on apprehensions of illegal aliens began to be collected in 1925.

The last major immigration action prior to World War II was the country's first "legalization" program, adopted in 1929 for the purpose of accommodating those long-term illegal resident aliens who were not legally admissible for residence. This program applied to aliens who had entered the country before June 3, 1921. The so-called "registry" date has periodically been updated; in 1986 it was moved from June 30, 1948, to January 1, 1972.

Economic and political realities during World War II, combined with reduced immigration levels during the Depression, forced a relaxation of U.S. immigration policy in the 1940s. In 1941 China became a wartime ally against Japan, and two years later the United States repealed the 1882 Chinese exclusion laws.

Moreover, partly to relieve U.S. wartime labor shortages and partly to legalize and control the influx of Mexican agricultural workers, the United States in 1942 began the Bracero guest-worker program. Through a series of bilateral agreements primarily with Mexico but also with Barbados, Jamaica, and British Honduras, the United States admitted temporary

Thomas J. Espenshade is Professor of Sociology
and Faculty Associate of the Office of
Population Research, Princeton University

agricultural workers to pick crops in Western states. But this program apparently did little to stem the flow of illegal farm workers. During the 1940s the number of illegal aliens apprehended by the INS totaled 1.4 million, in contrast to fewer than 150,000 during the 1930s.

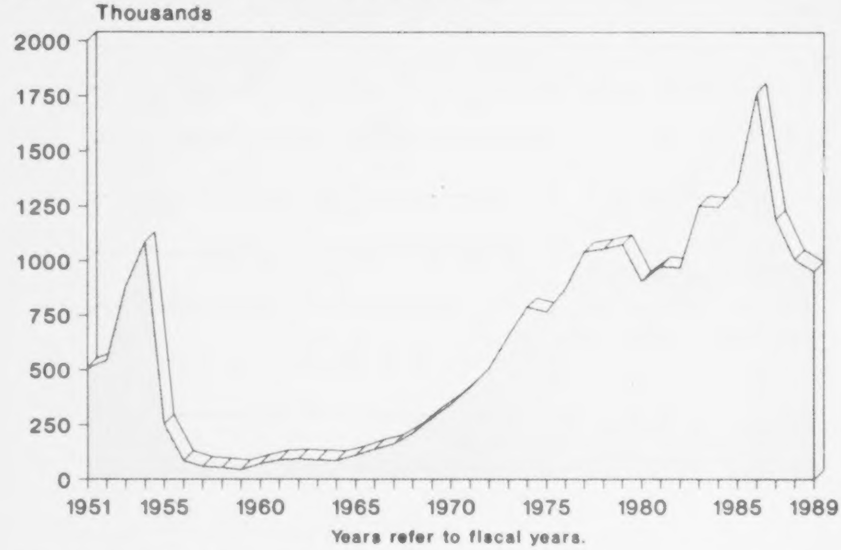
The Period Since 1950

By the early 1950s, mounting pressure to revisit U.S. immigration policy led to passage of the Immigration and Nationality Act (INA) in 1952. Although extensively revised since then, the INA is still the basic law governing U.S. immigration policy. As originally passed, it reaffirmed the national-origins system and established a preference system for skilled workers and for relatives of U.S. citizens and permanent resident aliens.

It also stipulated penalties, including fines and imprisonment, for persons found guilty of "harboring" illegal aliens, suggesting just how seriously the problem of illegal immigration was viewed at the time. However, in an apparent concession to Texas agricultural interests, the INA's "Texas Proviso" exempted employers of illegal aliens from these penalties. Not until 1986 would it be unlawful under federal law for undocumented immigrants to work in the United States *and* for U.S. employers to hire them knowingly.

In the three years from 1951 to 1953, nearly 2 million aliens were apprehended in the United States—far more than the recorded number apprehended in all prior years combined (see Figure 1). By 1954 the illegal alien problem was perceived as so serious that the U.S. Border Patrol launched "Operation Wetback," during which more than 1 million undocumented Mexican migrants, together with some persons who were U.S. citizens, were rounded up and deported back to Mexico. Within five years the number of illegal alien apprehensions dropped by 95 percent to fewer than 50,000 in 1959. But the flow did not stop completely. The Texas Proviso remained a loophole for illegal immigrants from Mexico, and in the 1960s, apprehensions of illegal migrants began growing once again.

Figure 1. Aliens Apprehended 1951-1988



Years refer to fiscal years.

Source: Immigration and Naturalization Service.

The increase accelerated after 1964 when Congress terminated the Bracero program in the face of public opposition to conditions under which migrant workers lived, the influence of the U.S. civil rights movement, and the effective lobbying of labor, church, and ethnic groups. In the 22 years of its existence, the Bracero program authorized the entry of between 4 and 5 million temporary agricultural workers. When it ended, job-seeking Mexicans who had grown accustomed to working in the United States found they no longer had any legal means of entry, but continued to come illegally. In this sense, the agricultural workers who came from Mexico following World War II, some legally as Braceros and others illegally, can be seen as the predecessors of today's undocumenteds.

The 1965 amendments to the INA barely touched the question of illegal immigration. However, they did abolish the national-origins quota system, ending discrimination against immigrants from Asia and Southern and Eastern Europe. Second, they led to the first fixed ceiling on immigration from the Western Hemisphere. And third, the 1965 amendments expanded the preference system for allocating immigrant visas to a seven-category system favoring close relatives of U.S. citizens and permanent resident aliens, those with needed occupational skills, and refugees.

Throughout this and subsequent periods, illegal alien apprehensions rose swiftly and reached a total of 8.3 million for the decade of the 1970s. The increase continued during the 1980s, reaching an all-time annual high of nearly 1.8 million in Fiscal Year 1986.

IRCA Arrives

Armed with the widespread belief that the United States had "lost control of its borders" and backed by apparent public support for "doing something" about the illegal alien problem, Congress in October 1986 passed the Immigration Reform and Control Act (IRCA), and President Reagan signed the legislation into law that November. IRCA's primary objectives

Continued on next page

Demographer's Page

Continued from previous page

are to curb, if not eliminate, the flow of undocumented immigrants into the country and to decrease the number of undocumented aliens residing in the United States.

To accomplish these goals, IRCA includes new employer sanction measures to restrict the hiring of undocumented workers, legalization programs to which upwards of 3 million undocumented immigrants applied before the deadlines expired, and stepped-up enforcement at the southern U.S. border against future illegal migration.

Uncertainty continues as to whether IRCA is having its intended effect. The volume of total INS apprehensions declined from 1.77 million in FY 1986 to 1.19 million in FY 1987—a drop of 33 percent in one year. Data for FY 1988 show a further decrease to 1.01 million apprehensions, and newly compiled figures for FY 1989 indicate that the decline in total apprehensions has continued, down to 954,000.[1]

To INS officials, the decline between 1986 and 1988 in Border Patrol apprehensions shows that the new law is working. Critics charge, however, that IRCA has had little or no impact on the flow of undocumented aliens and that apprehension statistics are down because Border Patrol officers have been diverted to other assignments, including hunting for drug smugglers. It is also argued that IRCA's legalization programs have reduced the pool of potential undocumented migrants because many persons who previously went back and forth illegally across the U.S.-Mexican border now cross legally or may have taken up permanent residence in the United States.[2]

Implementation studies of IRCA's effectiveness indicate that despite a $400 million rise in appropriations to expand Border Patrol personnel by 50 percent over 1986 levels, much of the extra expenditure has yet to be directed to an increase in enforcement activities focusing on illegal immigration. In the two years since IRCA's passage, many Border Patrol agents were drawn off into "employer education programs" designed to explain to U.S. employers their new responsibilities under IRCA.[3]

The Future

Little is yet known about IRCA's full impact on the size of the illegal alien population resident in the United States. This population appears to have increased by roughly 2 or 3 million during the 1970s, growing from less than 1 million in 1970 to a total in 1980 of somewhere between 2 and 4 million, with Mexican nationals making up about 55 or 60 percent of the total. This range of figures is considerably narrower than, and the level is substantially below, prior estimates.

Regarding annual growth in the stock of illegal aliens residing in the United States, the most recent best estimates put the average increase somewhere between 100,000 and 300,000 per year from 1980 to 1986, with 200,000 being the generally accepted figure. Since IRCA became law, this net flow is believed to have been cut to between 100,000 and 200,000.[4]

Taking into account IRCA's legalization programs to which more than 3 million undocumented immigrants applied, INS projects that the illegal population in the country could fall from between 4 and 5 million in 1987 to between 1.8 and 3.1 million at the time of the 1990 Census. If this projection materializes, then the change in the size of the U.S. resident illegal population between 1980 and 1990 will be relatively slight, due in large part to IRCA's impacts.

Looking beyond 1990, whether IRCA achieves the aims its supporters intended will be influenced by various challenges that face it, including: (1) domestic economic expansion and tightening U.S. labor markets, (2) projected rapid growth in those service occupations that are traditionally believed to be employers of undocumented migrants, (3) declining U.S. youth cohorts entering the labor force, (4) mounting labor pressures in the Caribbean Basin, and (5) enforcement and compliance issues.[5]

At the same time, several factors could work in IRCA's favor. First, no economic expansion lasts forever. When the next set of recessionary pressures emerge and unemployment rates rise from their current levels, these trends would likely relieve some of the present tightness of domestic labor markets and simultaneously reduce incentives for undocumented immigration. Second, automation in the service sector may reduce job opportunities for unskilled workers. Third, proposed reforms of U.S. legal immigration policy may lift some of the pressure from illegal immigration. Under new provisions passed by the U.S. Senate in July 1989 (but not yet considered by the House of Representatives), the number of immigrant visas reserved for members of the professions or for workers in skilled or unskilled occupations that are in short supply would be increased from 54,000 each year to 150,000. To the extent that persons who might otherwise come illegally possess the kinds of skills, education, and training sought, the proposed legislation may open up new avenues for legal entry into the United States, thereby reducing the flow of undocumented workers.

The question nonetheless remains whether IRCA will have its intended effect of curbing undocumented immigration. It seems unrealistic to think that differentials between sending countries and the United States, in both perceived and actual socioeconomic opportunities, will cease to motivate migrants seeking a better life. If this assessment is correct, then IRCA will not be the last chapter in the history of U.S. policy measures designed to control the flow of illegal immigrants into the country.

Acknowledgments: Conversations with Michael Hoefer, Robert Warren, and other members of the U.S. Immigration and Naturalization Service's Statistics Division have contributed to the author's understanding of this subject. Thanks are also extended to Diane Van Houten for assistance in preparing the final manuscript.

Editor's note: Because of space limitations, the text and list of references have been shortened from the original. A complete copy may be obtained from the author.

Notes

1. Michael D. Hoefer. Personal communication, Jan. 2, 1990.
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SOFTWARE

MaCATI is a full-featured telephone interviewing package for the Macintosh personal computer. It contains the basic features of other Computer Assisted Telephone Interviewing (CATI) packages for personal computers or minicomputers but with greater ease and much lower price.

MaCATI (pronounced Mah-KAY-tee) is designed to manage the creation and operation of surveys conducted by phone, e.g., market research or political polling. The program can be used to write the survey questionnaire, which can then be transferred to the interviewers' own Macintosh workstations.

Pulling the questionnaire up on the screen, interviewers can then make the survey calls with and code the answers using the keyboard or mouse. (Loading phone files purchased from a vendor, the programs can also automatically dial phone numbers and keep track of "used" or invalid numbers.)

Once the survey data have been collected, they can be transferred to a master file and tallied using MaCATI, or easily exported to other software programs for specialized analysis or report writing.

MaCATI for 1 to 2 Macintoshes functioning as workstations is priced at $795; 3 to 10, $2,195. For pricing on higher numbers of workstations or other information, contact: PSRC Software, Population and Society Research Center, Bowling Green State University, Bowling Green, Ohio 43403. Phone 419-372-8648.

—*A.H.*

POPULATION UPDATE

Estimated United States Population:

As of November 1, 1989	249,736,000
As of November 1, 1988	247,249,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1051.

Estimated World Population:

As of February 1990	5,288,000,000
Annual growth	93,000,000

Extrapolated from the mid-1989 population on PRB's *1989 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: September 1989

	12 months ending with September					
	Number		Rate			
Item	1989	1988	1989	1988	1987	1986
Live births	3,941,000	3,890,000	15.9	15.9	15.6	15.6
Deaths	2,143,000	2,171,000	8.7	8.9	8.7	8.7
Natural increase	1,798,000	1,719,000	7.2	7.0	6.9	6.9
Marriages	2,388,000	2,374,000	9.6	9.7	10.0	9.9
Divorces	1,157,000	1,171,000	4.7	4.8	4.8	4.8
Infant deaths	38,800	38,700	9.9	10.0	10.0	10.5
Population base (in millions)	...	...	247.6	245.0	242.7	240.4

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. *Monthly Vital Statistics Report* (Vol. 38, No. 9) from the National Center for Health Statistics.

LETTER TO THE EDITOR

In 1960, Heinz von Foerster et al. published an article in *Science* describing a mathematical formula they had created that "fit" the graph of human population growth during the past 2,000 years.[1]

The expression they gave was:

$$N = \frac{1.79 \times 10^{\text{[illegible]}}}{(2026.87 - t)^{\text{[illegible]}}} \qquad (1)$$

where N is population at t years A.D.

This is an abstract mathematical expression. Nevertheless, estimated world population data has fit the formula rather well during the last 2,000 years. For example, the Population Reference Bureau's estimate of world population in 1900 is 1.62 billion. Making the formula's t equal to 1900 results in a product of 1.48 billion—reasonably close. Similarly, the formula's figure for 1989 is 4.9 billion (compared to PRB's 5.2 billion estimate).

It is in the future that the formula starts to diverge markedly from conventional projections. So much so that, by its projections, world population would reach infinity on Friday, Nov. 13, 2026—an alarming statistical prospect.

By itself, a best-fit empirical equation is not remarkable. An equation can always be fit to a set of data if the number of parameters is sufficiently large. This equation's appeal is that using relatively few parameters, it projects world population totals across a broad range of the past quite well.

Clearly, though, this expression as presently constituted starts to deviate greatly from reality as population size increases past a certain point. The variance between the "good fit" with past data and the absurdly infinite future total would seem to doom such a formulaic approach to population projection.

Improvements, however, are possible in the von Foerster expression. Equation 1 can be reduced to

$$\frac{dN}{dt} = rN^{2.01} \qquad (2)$$

where $\frac{dN}{dt}$ is the instantaneous rate of population increase, r is an intrinsic rate of natural increase, with N being population size at t years A.D.

With the addition of a single additional parameter—carrying capacity—the equation can be altered so that it still "fits" past populations while projecting a leveling off in future population totals:

$$\frac{dN}{dt} = rN^{\text{[illegible]}} \left(1 - \frac{N}{K}\right) \qquad (3)$$

where K equals potential carrying capacity in number of people. (Both K and r are parameters explicitly fit to the data. The reader interested in understanding equations of population dynamics is referred to Ehrlich et al.)[2]

This new equation fits the past estimates as well as, or more exactly than, von Foerster's did. (For example, it produces a value of 5.1 billion for 1989 world population.)

Our equation also limits future population to a maximum carrying capacity and avoids the incredible result of Equation 1. Incorporating present population data into the equation results in an ultimate K of between 7.5 and 11 billion. As it happens, this projected saturation value comes close to recent UN and World Bank projections that show present trends in fertility decline resulting in stable populations of approximately 10.2 and 10.4 billion, respectively.

Equation 3 is not intended to replace empirical demographic methods, which track differences in K and r over time. It merely expands on previous observations on the nature of growth, while reflecting the realistic contingency of a saturation of the earth's population carrying capacity, given present conditions. It is important to note that as technology has advanced through cultural, agricultural, and industrial revolutions, the human population limits and carrying capacities have changed, and with them the saturation value K. (See Reference 2.) Hence it would be premature to think that one equation today can accurately summarize the human complexity. Only time can determine what factors are governing human population growth.

—Ariel Flat and Greg Smestad
Hewlett-Packard Co., San Jose, Calif.

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ADDENDA

Signs of the Aging of America–VIII

Population Today
last month switched
to Franklin Gothic Book 10-point
type—a larger, clearer text font than the 10-point
Optima formerly employed—and a boon for those suffering from
presbyopia as a result of the natural aging of the eye's lens which makes focusing
on near, small type more difficult than before, though if you can read this without a
microscope you are much too close

CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

ADDRESS UNKNOWN: The Homeless in America, by James D. Wright. Hawthorne, N.Y.: Aldine de Gruyter, 1989. 170 pages. $36.95. ISBN 0-202-30364-0.

Address Unknown stands out in the flood of recent publications about homelessness in U.S. cities. It offers an empirically grounded, well-written synthesis of current knowledge about this national problem.

Its author, sociologist James Wright, has conducted a series of studies on homeless people, including a study, featured prominently in this book, of participants in the 19-city "health care for the homeless" program. In *Address Unknown* he also relies heavily on a 1985-1986 survey of Chicago's homeless that is described in another recent, notable book: Peter H. Rossi's *Down and Out in America: The Origins of Homelessness* (University of Chicago Press, 1989).

Despite the proliferation of studies of the homeless, their overall number remains unknown. This is partially due to the difficulty of defining homelessness. Wright distinguishes between the marginally housed, who have a tenuous hold upon whatever minimal accommodations they have, and the homeless. Literally homeless means "those people who, on a given night, have nowhere to go . . . people who sleep out on the streets or who would sleep out on the streets except that they avail themselves of beds in shelters, missions, and other facilities set up to provide space for otherwise homeless people."

Wright's book is about the literally homeless. Estimates of the number of homeless vary widely, and Wright notes that the few studies that have tried systematically to count people at night in shelters and on the street have invariably found fewer persons than were expected.

Reviewing six such studies, Wright shows that in a given city, the number of homeless on a given night is likely to be between ½ percent and 2½ percent of the city's population in poverty. In the course of a year, the total number of persons who are ever homeless is likely to be about three times the number found on a given night. For the whole country, Wright estimates that there are about a half million homeless on a given night and 1½ million who experience homelessness during the course of a year.

Wright presents a demographic profile of the homeless by describing the characteristics of a typical 1,000 homeless persons: 146 of them are children age 19 or younger; 99 of these children are in family groups with their mothers, and 47 are homeless teenagers on their own.

The 1,000 homeless persons include 156 females who are not in family groups and 580 unaffiliated adult males, the largest category. There are very few homeless persons over the age of 65, so the adult population is youthful. Wright stresses the point that almost a quarter of the homeless people are in family groups. The homeless population overrepresents blacks, Hispanics, and native Americans. The homeless are not uneducated: Over half have completed high school and one in five has gone to college for at least a year. In sum, no single image suffices to describe a homeless person; except for sharing deep poverty, the population is heterogeneous.

About half of all homeless persons receive some form of social welfare benefits; the other half subsists with no help from the government. The proportion receiving benefits varies widely among cities, depending upon differing state eligibility requirements. While welfare benefits may be available for mothers, children, disabled, and elderly persons, they are unavailable for the most common category of homeless person, the adult male. The purchasing power of welfare benefits is so meager that they are inadequate to cover rent payments.

Homelessness has increased, because of the collision of two socioeconomic trends: an increase in the number of persons in poverty (from 24.7 million in 1977 to 32.5 million in 1987, according to Census Bureau estimates) and a decrease in the number of cheap rental housing units in cities. At the micro-level, he explains, poor persons who lack social connections, particularly family, may fall into homelessness.

In a flood of volumes about homelessness, what is distinctive about *Address Unknown*? The presentation is well balanced, it reviews the popular single-cause explanations of homelessness, like alcoholism, drugs, and deinstitutionalization of mental patients—and puts them into a broader social perspective. This book is consistently grounded in high-quality survey research. And, while Wright writes from a humane, sympathetic point of view, he is neither mawkish nor starry-eyed.

—Harvey M. Choldin

SPOTLIGHT

ZAMBIA

Population (mid-1989): 8.1 million
Land area: 290,580 sq. miles
Births per 1,000 pop.: 51
Deaths per 1,000 pop.: 18
Rate of Natural Increase: 3.7 percent
Total Fertility Rate: 7.2 children per woman
Infant Mortality Rate: 84 deaths per 1,000 live births
Life Expectancy Rate: 52 years
GNP per capita (1987 est.): $240
Capital: Lusaka

by Gwenda Brophy

CONGO
ZAIRE
RWANDA
BURUNDI
TANZANIA
ANGOLA
ZAMBIA
Lusaka
MALAWI
ZIMBABWE
MOZAMBIQUE
NAMIBIA
BOTSWANA

Formerly Northern Rhodesia, Zambia obtained independence from Britain 25 years ago. This landlocked Eastern Africa country of 8 million people has a rate of population growth of 3.7 percent, exceeded only by Kenya on the continent, and implying a population doubling time of just 19 years. In recent years there has been increasing awareness of population issues and in 1987 a population policy was drafted, one objective of which was to establish population planning, coordination, and monitoring.

Average completed family size is over 7 children, and modern contraceptive usage remains extremely low, around 1 percent. As of 1984, the average age of contraceptive acceptors in the capital city of Lusaka was 24 years; almost half of acceptors had only 1 or 2 children, suggesting that birth spacing is the rationale.

The predominant method was the pill, more a reflection of the range of methods available, since few facilities were able to offer a comprehensive range on a regular basis. Recently there have been innovative methods of communicating messages about population growth and family planning with street theater.

Legal induced abortion has been available since 1977 for a broad range of social and economic reasons, an unusual situation in Africa.

The country is currently facing very serious economic problems which have resulted in chronic shortages of essential goods, high unemployment (some 2 million Zambians, a quarter of the population, are estimated to be unemployed), and rising crime.

When it became in dependent, Zambia inherited what was then black Africa's largest industrial base. Zambia is heavily reliant on copper mining, and was badly hit by the fall in prices for the metal since 1975, contributing to increasing foreign debt, a fall-off in economic activity, and declining living standards. The country has recently renewed links with the International Monetary Fund, and begun economic policy changes.

With 48 percent of the population living in urban areas along the "copper belt" in the north and in Lusaka, it is one of black Africa's most urbanized countries. But migration from the countryside to the towns has started to move into reverse, and more people are returning to subsistence farming.

Half of Zambia's population is under 15 years of age—placing huge demands on education and health provision; however, government spending in key areas has fallen in recent years, on education by 62 percent in 10 years, and on essential drugs by 75 percent in the last four years. The economic plight has led to a sharp increase in nutrition-related child mortality.

The state of the economy is not Zambia's only problem. AIDS cases are increasing, and President Kenneth D. Kaunda, whose son died from AIDS, has called for a national emergency program on AIDS education and preventive measures. Meanwhile, the depletion of young, educated, and professional people continues—more than 7,000 of the 12,000 postindependence university graduates have left the country.

Gwenda Brophy is currently a consultant at Southern African Demographic Research, Swaziland.

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POPULATION TODAY

Vol. 18, No. 3 March 1990

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To implement it, Ceausescu suppressed contraception and abortion and placed women of childbearing age under surveillance

5 Census adjustment guidelines draw critical fire
At congressional hearings, many witnesses charge ground rules make adjustment impossible to justify

5 Crowded Egypt knows contraceptive methods, though fertility continues high
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A new era for Romania. (See page 4.)

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FROM THE EDITOR'S DESK

In population, as in every other field, there are popular stereotypes, or shibboleths, or popular impressions that ultimately don't withstand a whole lot of scrutiny. Two examples:

Statement: U.S. black fertility is considerably higher than white fertility.

Data: The two rates are close and getting closer. As of 1987, the total fertility rate (TFR) of black women is 2.3 children, while the white rate stands at 1.8. (For the nation as a whole, it's 1.9.) For women aged 25-29 and 30-34, white fertility is slightly higher than that for blacks.

Statement: The United States's population is rapidly aging.

Data: Aging—yes. Rapidly—no. The nation's median age, for example, has risen at only the most creeping of paces, from 30.0 years in 1980 to 32.1 in 1987. The proportion of elderly has likewise risen slightly, in 1980, those 65 years and over constituted 11.3 percent of the population; as of 1987, they constitute 12.2 percent.

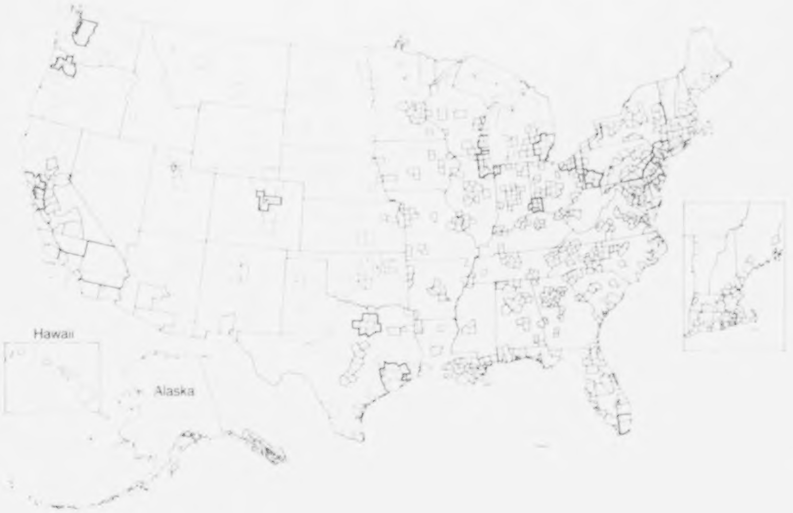
Hardly a radical shift. And in the 1990s, it will be the relatively small Depression-era cohorts that hit the age-65 wall. The baby-boomer hordes are still in their middle years (26 to 43 years old). In 2010, when the boomers are just starting to reach retirement age, those 65 and over will still only be 13.9 percent, according to the Census Bureau's middle-series projections.

But *then* the figures will start to zoom. By 2030, the 65-and-over population could be 21.8 percent—one out of every five Americans.

—*Art Haupt*

SPEAKING GRAPHICALLY

City Lights



There are 281 metro areas scattered through the United States: 20 CMSAs (Consolidated Metropolitan Statistical Areas), and 261 of the smaller MSAs (Metropolitan Statistical Areas). Altogether, these metro areas contain 76.9 percent of the nation's population as of 1987, and 16.3 percent of the land area.

Source: PRB, U.S. Census Bureau.

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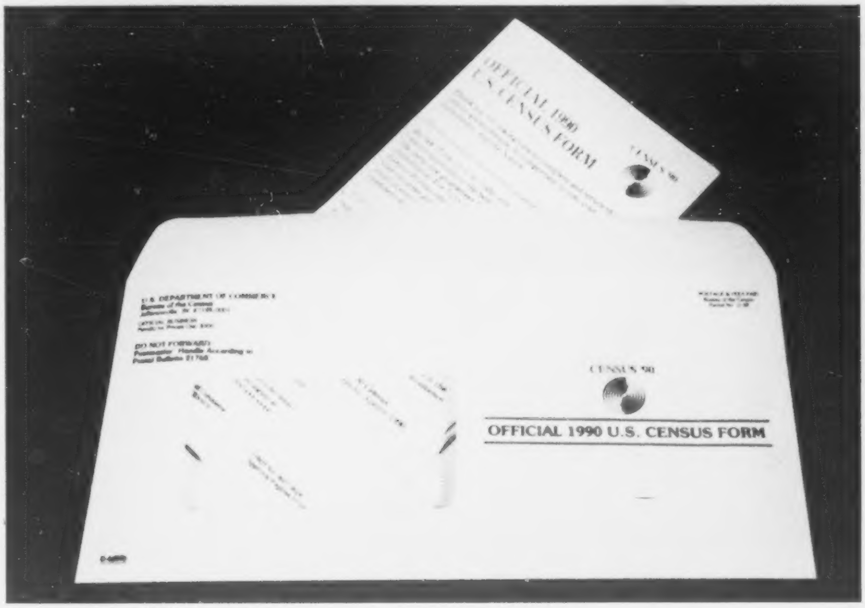
Other organizations	200	250

*Educators and students should send supporting documentation

Recycled Paper

Census Looking Out for "Person 1"


OFFICIAL 1990 U.S. CENSUS FORM
CENSUS 90
OFFICIAL 1990 U.S. CENSUS FORM
CENSUS 90

U.S. Bureau of the Census

You may already have won . . .

One month to go.

By now the census forms are in the mail. On or about March 23, every household will receive one of two forms. Five out of six households get the "short" form, which has 14 basic population and housing questions on it. The sixth household will get the "long" form, which contains all the short-form questions, plus 45 more.

Why two types of forms? The Constitution stipulates that everyone be counted (not estimated from a statistical sample), which is the primary purpose of the short form. But the long form really serves as a gigantic sample survey of the U.S.

The Long and Short of It

The short form is just three pages long, as follows:

- Each household member is to be listed on the outside of the form, starting with all-important "Person 1," the occupant in whose name the dwelling unit is held. Then follow:
- Seven population questions (1-7), asked about each person in the household, including their age, race and family relation (or nonrelation) to "Person 1." The short form also asks race (white, black, Indian, Eskimo, Aleut, and 10 categories of Asian and Pacific Islander), with spaces provided to write in Indian tribe and other race.

Included here as well are questions asking Spanish/Hispanic origin, with checkoffs on Mexican/Chicano, Puerto Rican, and Cuban. For the first time, a space is provided for writing in an "other" Spanish/Hispanic group, including other nationalities.

- Seven household questions (H1-H7) are asked as well, one concerning absentees from the household, and six describing characteristics of the dwelling unit, including type, size, rent or owned, and value.

That's it. Elapsed completion time, 14 minutes on average, says the Census Bureau. (The more people per household, the more time it will take, clearly.) No income or other sticky questions.

The seven population and housing questions listed above also appear on the long form, but finish them and you've just started. Turn the page and you will find two additional pages continuing the housing theme (questions H8-H26): plumbing and heating, real estate taxes, mortgage payment, etc. Not to mention condominium fee (new for 1990).

A bit of census-form trivia: The eight housing questions whose numbers are mysteriously double-underlined on the questionnaire are physical-plant type items (e.g., "Is this house on less than one acre?") that can be completed by enumerators even if the dwelling is unoccupied.

Next (and finally) come facing pages that ask 25 more questions (questions 8-33) about each person in the household, continuing the question series begun with 1 through 7. These questions ask each householder's education, ethnic origin, where he or she lived five years earlier, and (if a woman) how many babies she has ever had.

New and Gone

A number of items are new for 1990. On the short form you'll find stepson/stepdaughter as a category of relative, enabling such "blended" families to be tallied. "Unmarried partner" is included as a separate item for the first time.

Also new on the long form are a series of yes-or-no disability questions that ask whether any person has a "physical, mental, or other health condition that has lasted for 6 or more months" that limits the amount of work they can do, prevents them from working at a job, or causes them difficulty in going out or taking care of personal needs.

Counting the Homeless

Most Americans will receive the standard long and short forms. But some will see a different form: the Individual Census Report (ICR). This special form will be distributed to those people living in group quarters—a large category (in 1980, 5.8 million people were counted in this category) that includes people living in institutions and other special places and an undetermined number who are homeless.

The ICR comes in long and short versions, which resemble the regular long and short forms but without those forms' family-relation and housing questions. The data derived from the ICR will give a detailed demographic picture (and to the extent possible, the population) of people living in special situations—everything from rooming in a

Continued on page 8

Romania Ends Compulsory Childbearing

The American public was shocked, following the fall of Nicolae Ceausescu's regime in Romania, by revelations of the terrible human toll resulting from Romania's supression of access to contraception and safe abortion.

The general outlines of the story had for some years been a concern of professionals following demographic developments in Eastern Europe. Now that the fallen regime's abuses have come to public attention, further details of the policy are becoming more widely known.

For 23 years, Romania obsessively pursued the world's most rigidly enforced pronatalist policy. One of the first actions of the fledgling transitional government was to revoke, on Dec. 27, 1989, the Ceausescu laws and decrees that banned the importation and sale of contraceptives, strictly prohibited most abortions, required monthly gynecological examinations of all working women 20 to 30 years old, and imposed a tax on childlessness.

Institution of these laws and decrees began after Ceausescu came to power in 1965. At that time the birth rate had declined to 15.6 per 1,000 population (from 25.6 in 1955). Suddenly, without prior warning, in October 1966 the availability of abortion on request was restricted to women who were over 45 years old, who were already supporting 4 or more children, whose life was endangered by pregnancy, or who met criteria for very narrowly defined medical conditions.

The importation of contraceptives was prohibited, divorce became very difficult to obtain, and strict punishment was imposed on illegal abortion. As one result, the birth rate rose to 27.4 births per 1,000 population in 1967 but then gradually declined again to a new low of 14.3 in 1983. At the 1984 Party Congress, Ceausescu announced a goal of achieving a birth rate of 20 per 1,000 population, which, if attained, would increase the population to 30 million by 2000. As lax policy enforcement gave way to renewed drives against illegal abortion, the birth rate rose to 15.5 in 1984 and 15.8 in 1985.

Meanwhile, the maternal mortality rate increased from 86 maternal deaths per 100,000 live births in 1966 to 140 in 1981 and nearly 150 in 1984, when 86 percent of maternal deaths were attributed to abortion (according to official data reported to the World Health Organization). In 1986, Ceausescu proclaimed that "the fetus is the socialist property of the whole society. Giving birth is a patriotic duty, determining the fate of our country. Those who refuse to have children are deserters, escaping the law of natural continuity."[1]

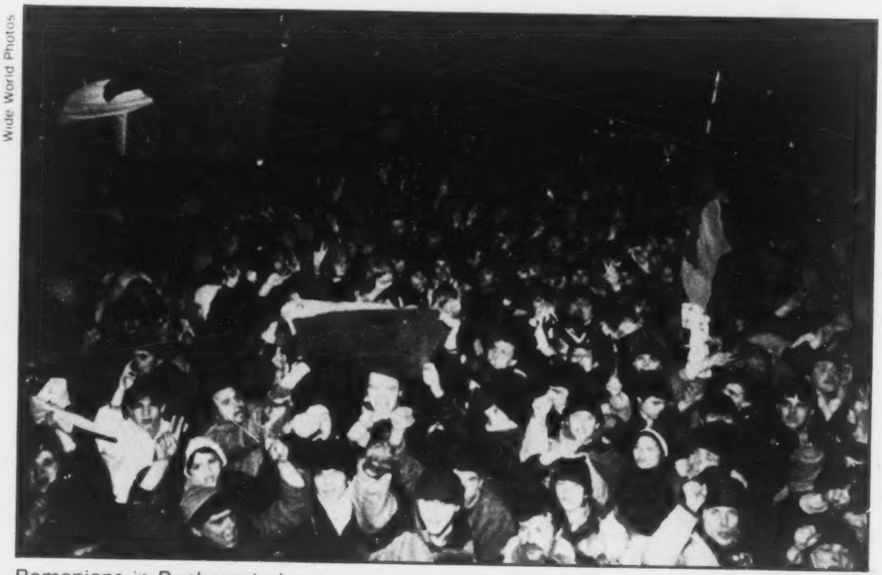
Access to legal abortion was further restricted. Having 4 children was no longer sufficient grounds for abortion on request. The requirement was raised to 5 children, each of whom had to be under age 18. This meant that, for some women, even having 5 living children might not be enough to obtain a legal termination of an unwanted pregnancy.

District demographic committees were organized to supervise pregnant women. At the same time, recommendations for pregnancy termination based on previously acceptable medical-legal criteria for fetal abnormalities or on genetic counseling were increasingly ignored in the processing of abortion applications. A special unit was established within the Romanian State Security Police (Securitate) to investigate allegations of illegal abortion. Securitate representatives were posted in every maternity ward and obstetrical/gynecological clinic or service. Physicians were confronted with prison terms of up to 12 years and loss of the right to practice medicine. Self-induced abortion became punishable by imprisonment from six months to two years or by payment of a fine. Reports appeared in the press of criminal proceedings, trials, and sentences imposed.

Contraceptives were available only with a physician's prescription, in cases where there was well-defined evidence that a woman's health would be greatly endangered by a pregnancy. Importation and sale of pills, IUDs, condoms, and other contraceptives were prohibited. Black market condoms were said to cost one day's wage. Permission for sterilization could be granted by a special medical commission only in cases where the woman would also meet the very stringent criteria for legal abortion.

Employed women up to age 45 were asked to undergo monthly gynecological examinations in their work places. Those who refused to

Continued on page 9


Wide World Photos

Romanians in Bucharest cheer a new government.

Adjustment Protested

The Secretary of Commerce's guidelines for adjusting the 1990 Census were heavily lambasted Jan. 30 by witnesses at a House subcommittee hearing.

Chairman Thomas Sawyer (D-Ohio) convened the hearing to review the Proposed Guidelines for Considering Statistical Adjustment of the 1990 Census, issued for public comment in December 1989. (See *PT*, September 1989 and January 1990.) There he heard the testimony from three other members of Congress, six statisticians, four lawyers, a representative of the General Accounting Office, and an Under Secretary of Commerce. With few exceptions, those testifying were highly critical of the guidelines.

Witnesses asserted that the guidelines were constructed in such a way as to make justifying an adjustment impossible.

Attorneys representing the city and state of New York, plaintiffs in the 1988 lawsuit that required the Commerce Secretary to publish guidelines, were vitriolic. They contended that the guidelines, which just "put up roadblocks" to adjustment, were not in compliance with the earlier courtroom settlement.

Statisticians were scarcely less restrained. The American Statistical Association's Barbara Bailar, former Associate Director of the Census Bureau, said that the guidelines cast doubts on the Department's sincerity, and Carnegie-Mellon University's Professor Jay Kadane called the guidelines "biased and unfair."

Two witnesses did not support the idea of adjustment. The University of Chicago's Dean William Kruskal said that the error structure of the Post-Enumeration Survey, upon which an adjustment would be based, was not sufficiently well understood at this point, nor was the combination of its error structure with that of the census itself. Under Secretary Michael Darby of the Department of Commerce said that the whole discussion of adjustment is not timely. "I believe the question of whether to adjust is for 1991."

The final version of the guidelines will be published Mar. 10, 1990.

SURVEY REPORT

Egypt

The findings of the newly published Egypt Demographic and Health Survey, conducted in October 1988, show some positive demographic trends for this North African county.

The 54.8 million people of Egypt inhabit less than 5 percent of the country's land, being concentrated on either side of the Nile. According to the 1986 Census, the density of Egypt as a whole is 128 people per square mile; the density of the inhabited areas is, however, more than 3,300 people per square mile. Some 44 percent of the population resides in urban areas while 56 percent live in rural areas.

Because of the economic importance of children, fertility levels are about average for North Africa. The survey found a lower total fertility rate (TFR), 4.38 total children per woman for 1986-1988, than TFR estimates had heretofore shown. Whether this lower figure will be confirmed by future assessments remains to be seen.

The correlations between fertility and residence are not surprising. In 1986-1988, the TFR in rural Egypt was 5.35, almost 2 children higher than the TFR found in in urban Egypt, 3.48. Likewise, fertility and education correlations are to be expected. In 1986-1988, the TFR for women with no education was 5.38, while those women who had completed secondary education had a TFR of 3.15, more than 2 children fewer.

Egyptian women are marrying later today than they did in the past. Of the ever-married women who were married between 1960 and 1964, 40.3 percent were wed before age 16, whereas of the marriages that took place between 1980 and 1984, only 18.2 percent of ever-married women were married before age 16. This trend towards later marriage may help to explain the lower total fertility rates.

The survey findings indicate that 38 percent of currently married women are practicing family planning—nearly all via modern contraceptive methods, with the pill and the IUD accounting for most usage (15.3 percent and 15.6 percent, respectively). This represents a substantial and steady increase during the 1980s.

In 1980 the Egyptian Fertility Survey had reported that 24 percent of ever-married women were using contraception, and the 1984 Contraceptive Prevalence Survey had shown a figure of 30.3 percent.

Breastfeeding, because of its contraceptive effect and benefits for infant health, is an important health measure for a country. In Egypt, although few babies are breastfed for more than two years, the duration of breastfeeding is fairly long. Over half (50.1 percent) of the babies who were 18-19 months old at the time of the survey were still being breastfed. Of those just a few months older (24-25 months old), only 12.2 percent were still being breastfed.

Residence and education play a large role in determining whether or not a mother will breastfeed. Not surprisingly, women who reside in urban areas breastfeed for shorter periods of time than women in rural areas. (15.5 and 18.6 percent, respectively). A plausible explanation is that mothers who live in urban areas are more likely to work for cash than mothers who live in rural areas. Women who work for cash breastfeed 2.1 months less than women who are not paid in cash (15.9 versus 18.0).

—*K.F.*

DEMOGRAPHER'S PAGE

USSR Ethnic Composition: Preliminary 1989 Census Results

by Ward Kingkade

In January and February 1989 the Soviet State Committee on Statistics (Goskomstat SSSR) conducted a national population census, which was the fourth census of the USSR taken since World War II. Following well-established tradition, some preliminary tallies of the population by geographic units were published in the Soviet media in April 1989. According to official accounts, further data were scheduled for publication around the end of 1989.

Although Goskomstat in Moscow has yet to publish further 1989 Census results, the Sept. 19 issue of the Estonian-language newspaper *Rahva Haal* carried some tables of summary data on the ethnic composition of the population in the 1989 Census. Of particular interest are the figures for the titular nationalities of the USSR's 15 Union Republics, summarized in Table 1.

As the figures indicate, the population of the USSR grew by more than 23 million persons from 1979 to 1989, increasing by an overall factor of 9 percent over the intercensal period. Although Russians, thanks to their numerical predominance in the Soviet population, experienced the greatest gain in absolute numbers among Soviet nationalities, their rate of increase was below the national average. As a result, the Russian share of the total Soviet population declined from 52.4 percent in 1979 to 50.8 percent in 1989.

If present growth rates were to continue unchanged, the Russians would cease to be a majority of the Soviet population by 1994. Under any reasonable scenario, the dissipation of the Russian majority seems inevitable. This would make the USSR the only major power in which the dominant nationality is not a majority.

The variations in growth rates among the ethnic groups are in close agreement with what is known about their fertility levels. The most rapid growth during the intercensal period among the 15 nationalities listed in the Estonian source occurred in the four Central Asian nationalities (Kirgiz, Tadzhiks, Turkmen, and Uzbeks) together with Kazakhs and Azeris. Period fertility indices for these ethnic groups imply completed family sizes of 4 or more children, well above the 2-child norm prevailing among most European nationalities. Among the European ethnic groups, Moldavians are distinguished by fertility at a level sufficient to ensure sustained growth in the long run, reflected by their above-average 1979-1989 growth rate. The slower growth of the highly educated Georgian and Armenian nationalities relative to their Caucasian neighbors, the Azeris, is paralleled by the corresponding differences in fertility.

The breakdown of the ethnic populations by language affiliation is of considerable interest, although it should be noted that political trends may influence the figures.[1] The three language affiliation categories distinguished in the Estonian source consist

Table 1. Distribution of the Soviet Population by Nationality, 1979 and 1989 Censuses

Nationality	Population 1979	Population 1989	Percent of Total 1979	Percent of Total 1989	Absolute Growth	Relative Growth (percent)
Total	262,084,654	285,688,985	100.00	100.00	23,604,331	109.01
Russians	137,397,089	145,071,550	52.42	50.78	7,674,461	105.59
Ukrainians	42,347,387	44,135,989	16.16	15.45	1,788,602	104.22
Belorussians	9,642,715	10,030,441	3.61	3.51	567,726	106.00
Uzbeks	12,455,978	16,686,240	4.75	5.84	4,230,262	133.96
Kazakhs	6,556,442	8,137,878	2.50	2.85	1,581,436	124.12
Georgians	3,570,504	3,983,116	1.36	1.39	412,612	111.56
Azeris	5,477,330	6,791,106	2.09	2.38	1,313,776	123.09
Lithuanians	2,850,905	3,088,298	1.09	1.08	237,393	108.33
Moldavians	2,968,224	3,355,240	1.13	1.17	387,016	113.04
Latvians	1,439,037	1,459,156	0.55	0.51	20,119	101.40
Kirgiz	1,906,271	2,530,998	0.73	0.89	624,727	132.77
Tadzhiks	2,897,697	4,216,693	1.11	1.48	1,318,996	145.52
Armenians	4,151,241	4,627,227	1.58	1.62	475,986	111.47
Turkmen	2,027,913	2,718,297	0.77	0.95	690,384	134.04
Estonians	1,019,851	1,027,255	0.39	0.36	7,404	100.73

Source. Rahva Haal, Estonia, Sept. 19, 1989, No. 216 (14,207).

Ward Kingkade is a Statistician (Demography)
in the Center for International Research,
U.S. Bureau of the Census

Table 2. Language Affiliation of Soviet Nationalities 1979 and 1989 Censuses

Nationality	Mother Tongue Native 1979	Mother Tongue Native 1989	Russian Second 1979	Russian Second 1989	Other Second 1979	Other Second 1989
Total	93.1	92.7	23.4	24.2	4.7	5.3
Russians	99.9	99.8	0.1	0.1	3.5	4.0
Ukrainians	82.8	81.1	49.8	56.2	7.1	8.5
Belorussians	74.2	70.9	57.0	54.7	11.7	11.7
Uzbeks	98.5	98.3	49.3	23.8	2.8	3.7
Kazakhs	97.5	97.0	52.3	60.4	2.1	2.9
Georgians	98.3	98.2	26.7	33.1	0.9	1.0
Azeris	97.9	97.6	29.5	34.4	2.0	2.2
Lithuanians	97.9	97.7	52.1	37.9	1.5	1.6
Moldavians	93.2	91.6	47.4	53.8	3.9	4.4
Latvians	95.0	94.6	56.7	64.4	2.0	2.5
Kirgiz	97.9	97.8	29.4	35.2	2.2	4.6
Tadzhiks	97.8	97.7	29.6	27.7	10.6	12.2
Armenians	90.7	91.6	38.6	47.1	5.7	5.0
Turkmen	98.7	98.5	25.4	27.8	1.6	2.0
Estonians	95.3	95.5	24.2	33.8	1.9	2.0

Source: *Rahva Haal*, Estonia, Sept. 19, 1989, No. 216 (14,207).

of: 1) those who consider the language of their ethnic group to be their mother tongue, 2) those who know Russian as a second language, and 3) those who know the language of another people of the Soviet Union as a second language. The typology is widely employed to gauge the dissemination of knowledge of Russian, under the general assumption that the members of a nationality who do not consider that nationality's language to be their mother tongue consider their mother tongue to be Russian.

This assumption reconciles the otherwise surprisingly low levels of knowledge of Russian as a second language among Belorussians and Ukrainians. It can hardly be the case that Kazahks are as familiar with Russian as members of these two Slavic nationalities are; rather, the presence of substantial contingents of russified Belorussians and Ukrainians claiming Russian as their mother tongue makes for lower proportions reporting Russian as a second language. As Table 2 illustrates, there has been little change in mother tongue affiliation between the last two censuses. However, in many instances there has been appreciable growth in knowledge of Russian as a second language; this is also the case with regard to knowledge of another Soviet language.

Despite these increases, there remain relatively few ethnic groups whose members in the majority report knowledge of Russian (7 of the 15 groups listed). Owing largely to the numerical weight of the Slavic nationalities, it can be estimated that as of 1989, 64 percent of the non-Russian population of the USSR knew Russian either as a mother tongue or as a second language, as compared to 62 percent in 1979.

Further results of the 1989 Soviet census are scheduled for release early in 1990. Goskomstat also intends to publish the detailed results of the 1979 census over the same year. These welcome contributions will be awaited with high interest.

Note

[1] For example, the high proportion of Uzbeks claiming knowledge of Russian as a second language in 1979 (49 percent, as compared to 15 percent in 1970) has been received with skepticism by most Western observers. The 1989 figure of 24 percent appears consistent with a plausible trend of more gradual increase.

21st Century Arrives Soon

With a kickoff conference Mar. 29, PRB's "America in the 21st Century" project moves into a new phase of disseminating its research.

The year-long project is designed to help public officials and policymakers better understand the present and future of U.S. demographic trends. In addition to the conference, the project is completing a series of publications on facets of the challenge. The "21st Century" booklets, which average 28 pages, are:

- **A Demographic Overview.** A brief summary of seven important demographic trends and how they relate to U.S. public policy issues.
- **Human Resource Development.** Focus on education, work force needs, and retirement issues.
- **Social and Economic Support Systems.** Needs of the poor and other at-risk population groups, such as children, disabled, and elderly (available April 1990).
- **Infrastructure Needs.** Prospects and problems related to the built environment, particularly transportation and housing needs.
- **Environmental Concerns.** Issues of land use, air and water quality, and waste disposal.
- **Governance and Politics.** Looking at voters, political realignments, and managing the public sector.
- **A Global Perspective.** Prospects for U.S. competitiveness and changing global markets.

"America in the 21st Century" is a project of PRB and the Population Resource Center (PRC) which were awarded a grant from the Ford Foundation to conduct this study.

– A.H.

Copies of the booklets from "America in the 21st Century" can be ordered, either individually or as a complete set, from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling toll free 1-800-877-9881. Visa or MasterCard accepted. Prices are: $30.00 for the complete set of seven booklets, or individually for $5.00 per single copy; 2-10 copies, $4.50 each; 11-50 copies, $4.00 each; 51 or more, $3.80 each. Orders for $50.00 or less must be prepaid. For U.S. orders, include $1.00 or 3 percent (whichever is greater) for postage and handling.

Census

Continued from page 3

college dorm to being homeless. (Another category of what might be called the quasi-homeless—a family "doubling up" with another family in a dwelling unit—will be picked up by the general census.)

Shelter and Street Night will take place Tuesday, Mar. 20, and Wednesday, Mar. 21. From 6 p.m. to midnight on Mar. 20, enumerators will interview people in pre-identified homeless shelters, shelters for abused women, and very-low-cost hotels and motels, including hotels used by local governments to house the homeless.

From 2 a.m. to 4 a.m., enumerators will scout streets frequented by the homeless, as well as train and bus stations. At the end of the night, from 4 a.m. to 6:30 a.m., enumerators will station themselves outside of abandoned and boarded-up buildings and interview people who will in many cases be emerging for the day.

People living on the street will be given the short form only; those living in shelters and other abodes will receive the short or long forms on a sample basis.

Shelter and Street Night will be conducted with restraint. Census workers will not enter the abandoned buildings on their watch. Nor will they awaken people sleeping on the streets; instead the sleepers' age, sex, and race will be estimated. Respondents will never be asked if they are homeless; rather, their responses will be tallied according to their location, be it a shelter or street where they were found. Nonetheless, for statistical purposes, the figures from Shelter and Street Night, while necessarily incomplete and conservative, should help give data users a clearer picture of the size and characteristics of the U.S. homeless population.

Transient Night will occur Saturday, Mar. 31, for people living in YMCAs, YWCAs, and campgrounds. Like Shelter and Street Night, the Transient Night operation will be one in which census enumerators distribute and collect the forms on the spot. People in these transient situations who have a fixed address somewhere else will be assigned to that fixed address for statistical purposes.

Starting the week after Census Day, enumeration of the people living in the most common types of group quarters will begin. This includes many sorts of group living situations, including dormitories, nursing homes, clinical institutions, maternity homes, prisons, and alcohol/drug detox centers. Again, many of these people will probably have another fixed address in addition, and if so, the census will assign their data to that location.

—*A.H.*

Education and Population

By any standard, U.S. elementary and secondary education is a major enterprise, involving nearly one out of every four Americans either as a student (45.4 million in 1987-1988), teacher (2.6 million), or additional staff (2.2 million). Education's cost ($309 billion in 1988) is comparable to that of national defense.

What are the coming effects of population on this major national mission? In PRB's just-published *Population Bulletin*, "American Education: The Challenge of Change," authors Jeanne E. Griffith, Mary J. Frase, and John H. Ralph trace the interaction between population and the schools from the halcyon 1950s into the 21st century.

The proportion of minority students in schools has grown, due to increased immigration and declining birth rates among white non-Hispanics. Persistent urban poverty has concentrated poor, minority students in the schools of central cities, while many urban white middle-class families have moved their children to suburban schools.

Fewer new workers will enter the job market in the next two decades. In 1980, persons 18 to 24 comprised 22 percent of the labor force. By 2000, because of low fertility and an aging population, this percentage will fall to about 15 percent. And in coming decades, immigrants and native-born minorities are projected to comprise about 40 percent of the country's entry-level workers, and women, 42 percent.

Business will no longer be able to follow the practice of picking up the best students and ignoring the rest. They will be hiring large proportions of the upcoming graduating classes of students, at a time when educated, adaptable workers will be more important than ever.

In a new decade of concern over the competitiveness of the national economy and the ability of the educational institutions to provide the necessary workers, the connection between population and education is certain to be watched closely.

—*A.H.*

Copies of the 44-page "American Education: The Challenge of Change," by Jeanne E. Griffith, Mary J. Frase, and John H. Ralph (Vol. 44, No. 4, December 1989), can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling toll free 1-800-877-9881. Visa or MasterCard accepted. Prices are: $7.00 per single copy; 2-10 copies, $6.50 each; 11-50 copies, $5.50 each; 51 or more, $4.00 each. Orders for $50.00 or less must be prepaid. For U.S. orders, include $1.00 or 3 percent (whichever is greater) for postage and handling.

APLIC Meeting

APLIC-International holds its annual meeting May 1-3, 1990, at the Royal York Hotel in Toronto, Canada. The theme is "Women in Development: Status, Issues and Information."

The meeting precedes and overlaps by one day the annual meeting of the Population Association of America (PAA) at the same venue. The confab will be the 23rd annual meeting for APLIC, whose full name is the Association for Population/Family Planning Libraries and Information Centers-International.

For further information, contact: Carol L. Knopf, Librarian, Brown University Demography Library, Population Studies and Training Center, P.O. Box 1916, Providence, R.I. 02912, phone 401-863-2668.

Symposium on Scarcity Set

"Population and Scarcity: The Forgotten Dimensions" is a full-day symposium to be held in Washington, D.C., April 20, 1990, during Earthweek.

Sponsored by the American Institute of Biological Sciences and the Smithsonian Institution, the symposium will examine the interaction between population and environmental problems.

It will take place at the Smithsonian's Museum of Natural History, and will feature as speakers Paul Ehrlich, Carl Haub, Herman Daly, Anne Ehrlich, John Holdren, Dan Luten, and Garrett Hardin. Registration is $35.00, which should be remitted by April 1. For further information and registration materials, contact: Louise Salmon, AIBS Meetings Manager, 730 11th St., N.W., Washington, D.C. 20001; phone 202-628-1500.

Romania

Continued from page 4

appear, or could not provide a medical certificate of exemption, were denied their rights to dental and medical care, pensions, and social security, and were also declared ineligible to spend their vacations at the resort maintained by their work place. Whether or not factory physicians received their full monthly salaries depended on plant employees achieving a state-stipulated monthly birth quota.

District demographic committees supervised the mandatory quarterly pregnancy tests for all women 20 to 30 years old. Unmarried persons over age 25 were assessed a special tax of 10 percent of monthly salary. If after two years a marriage was childless and there was no medically certified reason for infertility, each partner had to pay extra taxes.

The demographic effect of the strictly enforced policies is not known. As of January 1990, birth data for the years 1986-1988 had not been published by the Central Statistical Office or reported to the United Nations. Total fertility rates have not been availa-

Continued on next page

SOFTWARE

Immigration Tracking belongs to a new category of specialized business software, programs designed to help personnel managers comply with the provisions of the 1986 Immigration Reform and Control Act (IRCA).

Under IRCA, U.S. employers became responsible for checking the legal status of newly hired workers. Hirees must now show some proof of citizenship or legal-alien status and fill out the I-9 form on which they attest to their legal status. The employer in effect countersigns this form and keeps it on file, available for government inspection.

With *Immigration Tracking*, an I-9 form can be filled out on-screen and then sent to a printer. The program also contains a personnel database that tracks each worker and his or her work status over time, automatically flagging those whose status requires new action (e.g., those whose work authorizations are about to expire). It can signal when obsolete I-9 forms can safely be tossed.

Immigration Tracking requires an IBM PC or compatible with at least 512K RAM and two disk drives (hard disk recommended) and a dot matrix or laser printer. Price is $285. Contact Specialized Software Solutions, 5065 Lebanon Rd., Old Hickory, Tenn. 37138, phone 615-754-4334.

—*A.H.*

POPULATION UPDATE

Estimated United States Population:

As of November 1, 1989	249,736,000
As of November 1, 1988	247,249,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1051.

Estimated World Population:

As of March 1990	5,295,500,000
Annual growth	93,000,000

Extrapolated from the mid-1989 population on PRB's *1989 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: September 1989

	12 months ending with September					
	Number		Rate			
Item	1989	1988	1989	1988	1987	1986
Live births	3,941,000	3,890,000	15.9	15.9	15.6	15.6
Deaths	2,143,000	2,171,000	8.7	8.9	8.7	8.7
Natural increase	1,798,000	1,719,000	7.2	7.0	6.9	6.9
Marriages	2,388,000	2,374,000	9.6	9.7	10.0	9.9
Divorces	1,157,000	1,171,000	4.7	4.8	4.8	4.8
Infant deaths	38,800	38,700	9.9	10.0	10.0	10.5
Population base (in millions)	...	...	247.6	245.0	242.7	240.4

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. Monthly Vital Statistics Report (Vol. 38, No. 9) from the National Center for Health Statistics.

Romania

Continued from previous page

ble since 1983. However, a 30-day delay was imposed on birth registration in an effort to avoid acknowledging infant deaths occurring in the first month of life, as a statistical ruse to reduce the infant mortality rate — 25.6 infant deaths per 1,000 live births were reported in 1985.

Western media recounted that young women were increasingly abandoning unwanted babies in overcrowded orphanages. Until recently, couples from Belgium, France, Israel, and Italy were permitted to adopt babies in exchange for hard Western currency.[2] When asked about the lack of official statistics on fertility, a Romanian colleague at the 1989 IPPF Regional Meeting in Varna quietly commented, "No numbers; no problems."

A January 1990 broadcast from the Municipal Hospital in Bucharest noted that condoms and other contraceptives are again imported and abortions are being performed at a cost of about $3 per procedure (compared to $50 and up for previously illegal abortions).[3]

Currently, about 2500 abortions per week are performed in 12 Bucharest hospitals.[4] Women are still coming to hospitals for treatment of complications of self-induced abortions; they were not aware that abortion is now legal. Plans to implement a national family planning program are being developed in cooperation with WHO/Europe.

—Henry P. David
Transnational Family
Research Institute
Bethesda, Md.

References

1. Ceausescu, N. Cited in *Der Spiegel*, Oct. 20, 1986.
2. *Economist*. Jan. 16, 1988.
3. Amos, D. National Public Radio Morning Edition Broadcast from Bucharest, Jan. 4, 1990.
4. Inspector General, Bucharest Health Directorate, as told to Lyn Thomas, IPPF/Europe.

Note: Cited demographic data, based on official government statistics, and other information have been reported in issues of *Abortion Research Notes*, published by Transnational Family Research Institute.

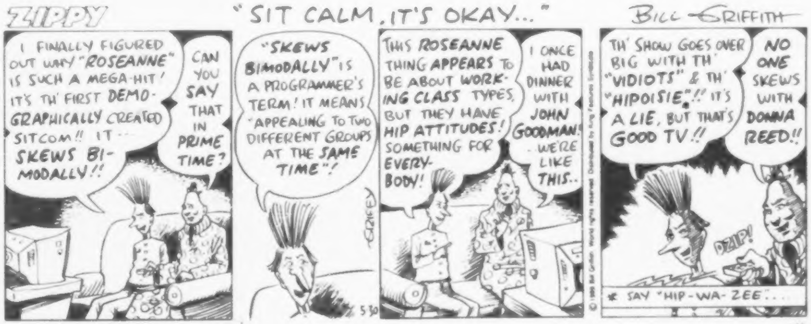
TAKE A NUMBER

America's Indians: As the curtain rises on the 1990 Census, 1980 Census data on the American Indian population by tribe and detailed characteristic have now been released by the Census Bureau. From the question on race, the report gives a 1980 national total of 1,478,523 population. The 10 most populous tribes were: Cherokee, 232,080; Navajo, 158,633; Sioux, 78,608; Chippewa, 73,602; Choctaw, 50,220; Pueblo, 42,552; Iroquois, 38,218; Apache, 35,861; Lumbee, 28,631; Creek, 28,278; other tribes, 711,840 . . . counts of American Indians vary, depending on the question. The above figures derive from the census question asking race; in contrast, the census question asking ancestry tallied 6.8 million people who claimed some Indian lineage.

Here and There . . . Florida remains the home of the U.S.'s fastest growing metropolitan areas; Naples, Ocala, Fort Pierce, and Fort Myers-Cape Coral led the nation with population increase of over 50 percent from 1980 to 1988. Casper, Wyo., and Steubenville-Weirton, Ohio-W. Va. brought up the rear by losing about 10 percent of their populations . . . according to the U.S. Census Bureau's new *World Population Profile: 1989*, over one-third of Korea's and Argentina's populations live in the capital city and one out of 10 world inhabitants lives in a city of 2 million or more . . . although it will be close, it does not now look as if births in the U.S. will hit the 4 million mark as some have speculated . . . Divorce rates may continue high (4.7 divorces per 1,000 population, as of 1989), twice the rate of three or four decades ago (the post-World War II low was 2.1, in 1958). But one divorce statistic seems to remain relatively constant: median duration of marriage at the time of divorce. From 1970, when it was 6.7 years, until 1986, when it was 6.9 years, this statistic has changed little over time. Divorce *frequency* may go up, but the length of marriage is an independent variable . . .

—C.H.

ADDENDA


ZIPPY
"SIT CALM, IT'S OKAY..."
BILL GRIFFITH
I FINALLY FIGURED OUT WHY "ROSEANNE" IS SUCH A MEGA-HIT! IT'S TH' FIRST DEMO-GRAPHICALLY CREATED SITCOM!! IT... SKEWS BI-MODALLY!!
CAN YOU SAY THAT IN PRIME TIME?
"SKEWS BIMODALLY" IS A PROGRAMMER'S TERM! IT MEANS "APPEALING TO TWO DIFFERENT GROUPS AT THE SAME TIME"!
THIS ROSEANNE THING APPEARS TO BE ABOUT WORK-ING CLASS TYPES, BUT THEY HAVE HIP ATTITUDES! SOMETHING FOR EVERY-BODY!
I ONCE HAD DINNER WITH JOHN GOODMAN! ..WE'RE LIKE THIS..
TH' SHOW GOES OVER BIG WITH TH' "VIDIOTS" & TH' "HIPOISIE*"!! IT'S A LIE, BUT THAT'S GOOD TV!!
NO ONE SKEWS WITH DONNA REED!!
DZIP!
* SAY "HIP-WA-ZEE"...

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CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

PREVENTING MATERNAL DEATHS, edited by Erica Royston and Sue Armstrong. Geneva, Switzerland: World Health Organization, 1989. 233 pages. ISBN 92-4-156128-9.

The special health needs of infants and women of reproductive age are often discussed together. Yet although infant mortality is a subject of concern, maternal mortality until recently was not a topic that most demographers and public health specialists concentrated on.

In part, this is because an estimated 500,000 women die from maternal causes each year (1 percent of annual deaths) compared to the deaths of nearly 11 million infants under the age of 1 (21 percent of annual deaths). And in part, the lack of attention was a reflection of women's low status and the attitude that death is a natural (and therefore acceptable) risk of motherhood.

However, with the 1976-1985 UN Decade of Women and several subsequent international conferences, e.g., the 1987 International Safe Motherhood Conference, more attention is being focused on maternal mortality. Although the number of maternal deaths is not as tragically high as the number of infant deaths, the gap between the developed and developing world is much larger: For every maternal death in a developed country there are 82 deaths in the developing world, much higher than the ratio of 1:5.6 for infant mortality. Such a gap seems to indicate that there are public health measures that could be taken to save mothers' lives.

Preventing Maternal Deaths is an up-to-date discussion of 1) maternal mortality statistics and their weaknesses, 2) the causes of maternal mortality, and 3) the current thinking on how to prevent maternal mortality. Written by a team of experts from WHO and other prestigious research organizations and universities, the book is highly readable and informative. It is not a technical manual and yet has enough detail to provide more than just an introduction to the subject.

We cannot expect to see a clever acronym to cover a seven-point maternal survival strategy. As the book points out, many of the life-threatening problems associated with childbearing need relatively sophisticated medical care—blood transfusions or surgery. However, countries can 1) train traditional nurse midwives in improved hygienic practices, 2) develop screening programs to help identify potentially serious problems early in pregnancies, and 3) institute referral systems so that women with problems get the help they need.

—Nancy Yinger

POPULATION AND RESOURCES IN A CHANGING WORLD: Current Readings, by Kingsley Davis et al. Stanford, Calif.: Morrison Institute for Population and Resource Studies, 1989. 532 pages. $10.00. US. ISBN 89-60189.

Few authors seem to address the relationship between population and resources directly. This anomaly, observe the editors of *Population and Resources in a Changing World*, can be explained in part by the traditional separation of disciplines, a division that this compendium endeavors to bridge.

Population and Resources is a collection of previously published articles arranged in four sections: "Theory and Fact," "Human Demography Relevant to Resources," "Resources Relevant to Population," and "U.N. Summary of 1988." One example of the insights gained when disciplines are combined is Nathan Keyfitz's article exploring the population-environment link in a reversal of the traditional carrying capacity paradigm, posing the proposition that resources determine population rather than the other way around.

The idea that population is resource-determined, what Keyfitz calls a "population-capacity approach," might be valuable for conducting long-range projections. Keyfitz cites Nigeria as an example whose projections are currently done on the basis of extrapolation and that those projections might be adjusted downward under his proposed "population-capacity approach."

Many of the other chapters do not necessarily link population and resources as their primary objective; rather, they might deal with one component of resources such as the solid waste crisis, energy, or water resource issues in a descriptive fashion with demographic issues treated peripherally.

Understanding the conditions that will ensure benign demographic-environmental balance is essential for global survival. Because such understanding does not yet fully exist, there is an urgent need to advance our knowledge. According to Nafis Sadik, "One of the priorities for the future will be action-oriented research into the linkages, to guide national and international development policies."

—Alexander von Cube

SPOTLIGHT

LESOTHO

Population (mid-1989): 1.7 million
Land area: 11,720 sq. miles
Births per 1,000 pop.: 41
Deaths per 1,000 pop.: 13
Rate of Natural Increase: 2.8 percent
Total Fertility Rate: 5.8 children per woman
Infant Mortality Rate: 106 infant deaths per 1,000 births
Life Expectancy: 55 years
GNP per capita (1987 est.): $360
Capital: Maseru

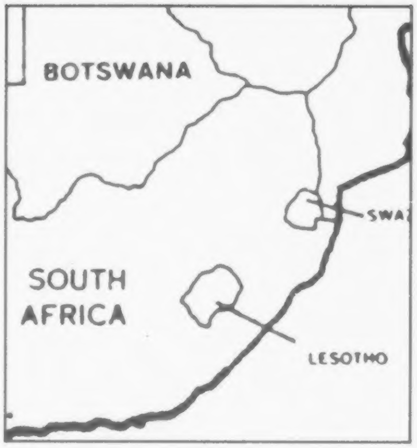
by Gwenda Brophy

The Kingdom of Lesotho, encircled by the Republic of South Africa, is a small, mountainous country of 1.7 million people. It has a narrow resource base and less than 13 percent of the land area is suitable for agriculture. The majority of the population is engaged in subsistence agriculture. High-quality mohair and wool are important exports, gathered from the goats and sheep that graze the mountainous terrain.

Lesotho is also an exporter of labor; approximately 40 percent of the male labor force is employed in the mines of South Africa—and the country is heavily dependent on remittances from this source.

The national government has emphasized the importance of encouraging the growth of the industrial sector to provide much-needed employment opportunities and to diversify the productive base of the economy. To date, however, there has been only moderate success.

The population is estimated to be growing at 2.8 percent a year, which is projected to result in an annual increase in the labor force of between 20,000 to 25,000 through the 1990s. Unemployment is estimated at 22 percent of the labor force.



A new campaign is presently under way to slow the growth of the population by formulating a national population policy and intensifying the dissemination of family planning information and contraceptives. Strengthening urban and rural health services (by upgrading clinics and other facilities) and improving infrastructure are elements of a wide-based effort to bring improved health, nutrition, and family planning services to poor people, especially women and children. Some rural residents still lack access to basic health care, and up to 30 percent of children under 5 are suffering from malnutrition.

There is increasing concern about sexually transmitted diseases (STDs), and an STD control program is planned under which prostitutes and other high-risk groups will be treated and monitored. At present, 1 percent of the population is believed to be HIV-positive.

Contraceptive prevalence was only 5 percent in 1977 when the last major survey was carried out. The influence of the Catholic Church is strong in Lesotho, but in recent years it has taken a broader stand on family planning. Male opposition to family planning is particularly strong, especially among migrant workers but also among many educated men, according to a recent Women and Health seminar. The Lesotho Planned Parenthood Association (LPPA), which was established in 1967, sends out field educators specializing in male motivation who address men at road-building sites, offices, and mine sites, but many men remain opposed to family planning.

Spousal separation resulting from very high male migration is believed to have played a stong role in dampening fertility in the past. Formerly, absences of up to two years were not uncommon, and fertility levels were relatively moderate for Sub-Saharan Africa even though contraceptive use was low. Absences are now much shorter.

In terms of the future, imminent major changes to the economic fabric are currently under way. A massive development, the Highlands Water Project — under which Lesotho is to sell water to South Africa — will be a major source of revenue to the mid-1990s. How Lesotho spends the revenue, and the effects on the demographic fabric, will be of significant interest.

Gwenda Brophy is currently a consultant at Southern African Demographic Research, Swaziland.

POPULATION TODAY

Vol. 18, No. 4, April 1990

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A country with 78.5 million population, for one thing; also, significant net immigration

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Perhaps 150,000 over the next three years

5 **Tunisia's fertility has fallen to 4.3 lifetime children per woman**
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U.S. Dept. of Health & Human Services

. . . the beautiful sea. (See page 6.)

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FROM THE EDITOR'S DESK

Long ago, when *Population Today*'s predecessor wrote about the American enthusiasm for place nicknames (see *Intercom* July/August 1983), it was with amazement. From the Strawberry Capital of the World (Watsonville, Calif.) to The Town They Liked So Much They Named It Twice (Walla Walla, Wash.), America's places have almost as many nicknames as proper ones.

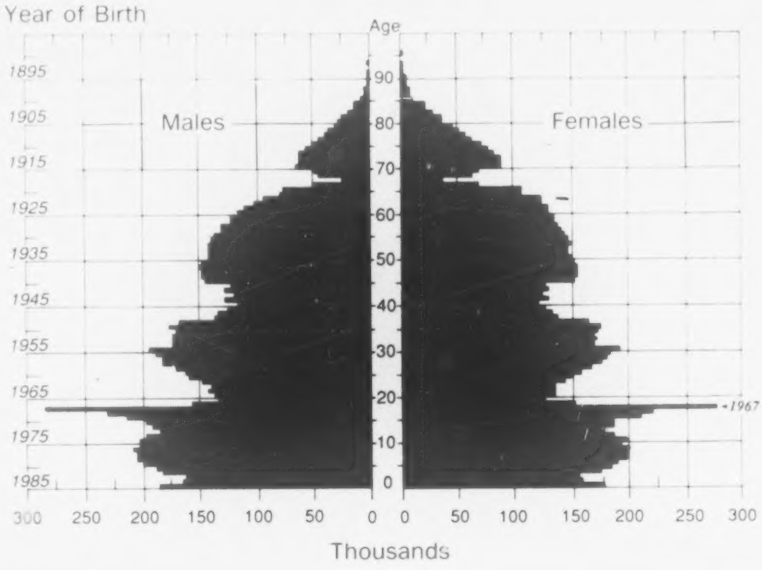
That article was based on information from *Geo-Data*, a Gale Research gazetteer. But we've now discovered what is surely the definitive work on this subject, *Nicknames and Sobriquets of U.S. Cities and States*, by Joseph Nathan Kane and Gerard L. Alexander. Published by Scarecrow Press in 1970 (revised in 1979), *Nicknames* is surely the last word on this mania, with somewhere around 10,000 monikers recorded—everything from Land of Steady Habits (Connecticut) to Action Capital of the Midwest (Des Moines, Iowa) to Metropolis of the Magic Valley (Brownsville, Texas). Over a hundred places call themselves "Queen Cities."

But perhaps the most popular handle may be "Gateway to [somewhere else]," an echo of this huge frontier nation's expanding days, when every place was a Gateway. America's nicknames tell us something not only about localities, but about the whole nature of local pride American style.

—*Art Haupt*

SPEAKING GRAPHICALLY

Romania's Population Structure, July 1, 1985



In 1966, in order to promote population growth, the government of Nicolae Ceausescu abruptly restricted access to abortion and prohibited importation and sale of contraceptives, causing a dramatic 1967 increase in the number of births (see above). Notwithstanding the regime's authoritarian pronatalist measures, births soon declined again.

Pyramid source. Michel Louis Lévy, *Population & Sociétés*, February 1990 (No. 243). L'Institut National d'Etudes Démographiques, 27, rue du Commandeur, 75675 Paris, Cedex 14, France. Reprinted by permission.

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Recycled Paper

The Quarter-Billion Census Is Here

A decade in the making, Census Day is finally here.

The long-cresting wave of preparation has finally reached the 106 million residences from coast to coast—here, there, and everywhere—principally by mail. (The census forms were to arrive March 23, with a reminder postcard arriving March 30.) By now most *Population Today* readers have very likely already received their blue-and-white census form (and doubtless completed and mailed it), all without seeing a single census taker.

At some 11 percent of households that don't appear on mailing lists (in certain rural and seasonal-housing areas of the South, Appalachia, and the Midwest), enumerators have personally dropped off census questionnaires to be mailed back. And in very rural parts of the country where mailing addresses are hard to determine, the Postal Service has left unaddressed questionnaires at all known housing units, to be picked up by census enumerators, who will also record the new address.

At the 484 district offices, returned forms are being logged in by the millions. From now until June, the census work force will be at its peak of 300,000, checking the forms and starting follow-up on incomplete or unreturned forms, which begins with phone calls and can encompass up to three in-person visits. The aim is to complete all field work by October 1990.

Everyone in the resident population will be counted, except for diplomats residing in embassies and foreign tourists. For the second time, armed forces and government civilian employees overseas and their dependents will be included in the count for purposes of congressional apportionment. (In 1970, during the Viet Nam War, armed forces and government employees overseas were counted for apportionment. The Census Bureau also encouraged voluntary self-tallying of citizens living abroad, but did not try to assign these overseas citizens to their home states.)

U.S. CENSUS
ENUMERATOR

Enumerators will conduct follow-ups.

This government-related population, estimated at 1.2 million to 1.6 million, will not receive census forms. Rather, administrative records will be used to obtain this head count, and the recipients tallied as part of the state of residence they have declared.

By December 31, 1990, the Census Bureau must deliver its state-by-state head counts to the President to be used for the once-a-decade reapportionment of the House of Representatives. By April 1, 1991, state counts down to the block level must be forwarded to state governors to be used for redistricting.

How Many?

What will that count be? On March 6, 1990, the U.S. resident population passed 250 million, according to Census Bureau estimates. Add in the national daily growth of about 6,800, or 170,000 for the remainder of March, and the April 1 population could be . . . 250,170,000.

Could be—but don't count on that being the figure. Remember that the 1980 Census, the most accurate in U.S. history, provided significant surprises for people who had been relying on interim population estimates in the late 1970s. (See "Take a Number," page 10.)

Other censuses will be taking place at around this time—in Puerto Rico, a commonwealth associated with the United States whose estimated 3.3 million residents are U.S. citizens, and in the U.S. Virgin Islands and the U.S. Pacific Territories (American Samoa, Guam, and the Northern Mariana Islands). These censuses will be separate from the U.S. Census, but will be operated by the Census Bureau in cooperation with the local government and conducted primarily door to door.

The Impact

In addition to helping representative government to function, the 1990 Census numbers will figure importantly in an activity of almost equal urgency—funding.

Some $39 billion—35 percent of all federal grant outlays—are allocated on the basis of population data (as of Fiscal Year 1987). Eligibility requirements are one method of allocation (whether a governmental recipient has a certain benchmark population, for example, a city of 50,000 or more); the other is determining grant shares according to population size per person, so the more people, the more funding.

By far the largest population-driven disbursement is the $13.3 billion allocated for federal highway planning and construction. Other significant programs disbursed according to population figures are the Department of Education's grants ($7.1 billion); Department of Health and Human Services funding for Head Start, Social Services Block Grants, and other programs ($5.5 billion); and entitlement grants and other programs from the Department of Housing and Urban Development ($3.0 billion).

More on Adjustment

The final Commerce Department guidelines for possible adjustment of the 1990 Census were released March 12 by Under Secretary Michael R. Darby (see *PT*, February and March 1990).

After a census, the Census Bureau conducts a postenumeration survey to check errors. Such a survey, of 150,000 households, will be held from June to October 1990. After its results

Continued on next page

Population Prospects For a Unified Germany

With the fast-breaking events in Eastern Europe, the reunification of East and West Germany is now more often mentioned in terms of "when" than "if."

What will Europe look like in the population context of a new, combined Germany? The U.S. Census Bureau's Center for International Research (CIR) has made some general estimates (see tables).

West Germany has more deaths than births, but this deficit has been more than balanced by significant net migration, of which less than 10 percent came from East Germany in 1988.

Table 1. Population Ranking of Europe's Top Ten

Rank	Country	Midyear 1990 Population (millions)
1	Combined Germany	78.5
	West Germany (Fed. Rep of Germany)	62.2
	East Germany (German Dem. Rep.)	16.3
2	Italy	57.7
3	United Kingdom	57.4
4	France	56.4
5	Spain	39.3
6	Poland	37.8
7	Yugoslavia	23.8
8	Romania	23.3
9	Czechoslovakia	15.7
10	Netherlands	14.9

Source U.S. Bureau of the Census, Center for International Research.

Table 2. Economic Ranking of Europe's Top Ten

Rank	Country	Est. 1988 GNP in 1988 ($US billion)
1	Combined Germany	1,077.2
	West Germany (Fed. Rep. Germany)	870.0
	East Germany (German Dem. Rep.)	207.2
2	France	762.0
3	United Kingdom	755.3
4	Italy	753.8
5	Spain	365.2
6	Poland	276.3
7	Netherlands	191.2
8	Czechoslovakia	158.2
9	Yugoslavia	154.1
10	Romania	126.3

Source. CIA Handbook of Economic Statistics. 1989.

Table 3. 1988 Population Components of East and West Germany

	Births	Deaths	Net migration	Increase
West Germany	677,000	688,000	482,000	471,000
East Germany	216,000	213,000	-40,000 (approx.)	-37,000 (approx.)
Total	893,000	901,000	442,000 "	434,000 "

Source U.S. Bureau of the Census, Center for International Research.

Final figures for 1989 are yet to be calculated. But even in this epochal year, less than half of West Germany's net migration is likely to be from East Germany. The East German influx for the year may end up being 350,000, but the total net migration is likely to be 700,000 to 1 million.

The largest component of West German immigration, in fact, is ethnic Germans from countries in Eastern Europe *other* than East Germany. The 1989 total of these Germans from outside Germany is approximatley 380,000, according to a U.S. embassy statistical summary. Of these, 250,000 are from Poland. In addition, an estimated 120,000 foreign asylum seekers and 190,000 other foreign immigrants (from Poland, Turkey, Greece, and other countries) entered West Germany in 1989.

A combined Germany would experience population growth, at least for now. But its fertility is projected to remain below replacement level. If fertility remains below replacement level, CIR projections show a combined Germany would grow slightly to 80.1 million by 2000 and then start to shrink, so that by 2035 it would have a population of 70.4 million that was declining by half a million people per year.

—A.H.

Census

Continued from previous page

are analyzed, and after the panelists of the adjustment advisory board have made their recommendations, the Secretary of Commerce has until July 15, 1991 to decide ultimately to adjust or not to adjust.

The guidelines themselves are now fewer (eight, down from 12), and seemingly more conciliatory, but their thrust remains largely the same. For census numbers to be adjusted, the guidelines contend, there must be evidence that adjustment (and the particular method) are more accurate than the raw count would be.

Further, adjustment must be accomplished by applying the adjustment factors uniformly from the smallest census unit, i.e., the census block, on up. "Put simply, in an adjusted population count each individual enumerated will receive a relative weight according to his or her race, age, sex, ethnic background, tenure, and place of residence. The aggregate counts will then be built up from the weighted individuals to census block, local area, state, and national counts." Additional technical guidelines governing adjustment will be forthcoming.

The guidelines also warn "that the Department [of Commerce] and the [Census Bureau] have consistently stated that [July 15, 1991] is the earliest possible date by which there is a 50-percent chance that an analysis could be completed on which a decision to adjust could be based." If the statistical work is not complete by that date, then no adjustment will be made. Thus, even if all other obstacles to adjustment were surmounted, the time window for adjustment might close too soon for adjustment to be implemented.

In any case, the final Commerce position is, as stated by Under Secretary Darby: "Adjustment will be an issue in 1991 only if we fail to achieve our goal in 1990 of a full, fair, and accurate census."

—A.H.

Israel New Home for Soviet Jews

With the lifting of restrictions by the Soviet government, emigration of Soviet Jews to Israel has accelerated. In 1990, 100,000 immigrants are expected, much higher than the 1989 total of 13,000. Some 150,000 Soviet Jews may emigrate to Israel over the next three years, and perhaps half a million ultimately.

Net migration had been falling for years; as recently as 1987, some 13,000 immigrants entered Israel, but they were offset by about 13,000 emigrants.

If large numbers of migrants settle in the territories occupied in the 1973 war, it could alter the population balance there between Arabs and Jews. The Jewish population in these territories is currently about 170,000 (of whom 104,000 are in East Jerusalem, 65,000 in the West Bank, 2,500 in Gaza). Arabs in the territories number 1.6 million. Israel's population, including Jews in the occupied territories, is 4.5 million.

Ten percent of Soviet arrivals have settled in East Jerusalem; 1 percent in the remainder of the territories. In a January 1990 speech, Israeli Prime Minister Yitzhak Shamir asserted that a "big Israel" requires "big immigration," words that were interpreted by Arabs as tantamount to encouraging the placement of new immigrants in the occupied territories of the West Bank and Gaza. Government financial incentives are normally bestowed on occupied-territory settlers.

Though the practical effect of censorship orders on Israel's freewheeling press may be problematical, in March 1990 military authorities ordered journalists to submit for censorship any news stories dealing with Soviet emigration—a rare case of migration projections being considered too sensitive for public consumption. Arab protests meanwhile have led the Soviet government to hold off the planned introduction of direct emigrant flights from Moscow to Tel Aviv, at least for the time being. *—A.H.*

SURVEY REPORT

Tunisia

Tunisia, the smallest of the countries that make up the Maghreb of North Africa, is situated between Algeria and Libya with access to the Mediterranean Sea to the north.

Tunisia's population of 7.9 million is estimated to be growing by 2.15 percent per year, a rate at which the population will double in 32 years. Much of this growth is a result of declining mortality rates. Results of the recently published 1988 Demographic and Health Survey in Tunisia (EDST) indicate that the country's infant and child mortality rates in Tunisia are the lowest found in North Africa. Nonetheless, the infant mortality rate is 50.4, more than five times the rate in developed countries.

Total fertility rates (TFR) have also declined moderately, from 5.7 lifetime children per woman in 1978 to 4.3 children in 1988. While some of this decline is attributable to a rise in the average age at marriage and first birth, use of contraception has also had an effect. Fifty percent of married women are using contraception, a one-third increase over 1978. Recognition of contraceptive methods and sources is high; 99 percent of married women have heard of at least one modern method and 96 percent say they know of a source for a modern method. Most commonly used methods include the IUD (used by 17 percent of married women), female sterilization (12 percent), and the pill (9 percent). The most commonly used traditional method is periodic abstinence, used by 6 percent of married women. Fewer than 10 percent of married women use a traditional method.

Despite the increase in contraceptive prevalence and the decline in fertility, women are still having more children than they desire. The EDST found that more than three-quarters of married women would like to limit or space their births. While 57 percent of married women say they want no more children, only 12 percent have been sterilized. In the five years prior to the survey, mothers report that 13 percent of the births were not wanted and another 20 percent were wanted later.

Of those women who discontinued contraception in the five years before the survey, most stopped to become pregnant. However, about 30 percent of women who discontinued use of the IUD, pill, or condom did so because of an unintended pregnancy. Other reasons given include menstrual disturbances and health concerns. According to the survey results, 39 percent of married women may be in need of family planning services, yet only half of these women say they intend to use contraception in the future.

Maternal and child health indicators show that place of residence, mother's education, and age and birth spacing all affect child survival in Tunisia. Mothers of more than half of the children under age 5 in the rural areas received no prenatal care. A similar proportion of uneducated mothers had no prenatal care. It is not surprising that children of these same groups of mothers have more than a 25-percent greater infant mortality rate than urban children and children of educated mothers. Children of mothers age 40-49 or less than age 20 also have greater infant mortality rates. Similarly, children born less than two years after a sibling are three times more likely to die before age 1 than children born two or more years after a sibling.

—B.S.

DEMOGRAPHER'S PAGE

Population by the Sea

by Larry Long

Knowing the percentage of Americans who live within 50 miles of a coast may seem like demographic trivia. But many callers to the Census Bureau ask for this very statistic or request "verification" of an anecdotal figure that has somehow gained currency in the media.

An approximate table on coastline population is published in the Census Bureau's *Statistical Abstract of the United States* (Table 34 in the 1989 edition), but that has not stopped many people from firmly believing in the anecdotal figure, which happens to be too high by a very wide margin.

The reasons for this percentage inflation are easy to envisage. An observer can see that many coastal communities are growing rapidly and straining local public services. Media reports of a "bicoastal economy" suggest a centrifugal shift of economic activities and population away from America's "heartland" to locations that may strain fragile marine ecosystems and result in coastal erosion, pollution, and loss of wetlands. And there is concern about the possibility of sea levels rising because of global warming.

The upshot is that many people apparently believe that three-fourths of Americans live within 50 miles of a coastline. Because of its shock value, this ersatz number has come to represent a statistical version of Gresham's law under which bad statistics drive out the right numbers.

The bogus statistic has been cited in newsletters of environmental organizations and may gain further circulation through its appearance in a letter to the editor of the *New York Times* (November 29, 1989, p. A30) about population growth and global warming. The original source of the reappearing statistic may be a *Business Week* cover story about ocean pollution (October 12, 1987, page 90) which stated: "By 1990, 75 percent of the U.S. population will live within 50 mi. of the shore, compared with 40 percent in 1984, according to the U.S. Census Bureau."

The Answer

In fact, according to procedures used for many years by the Census Bureau, just over 53 percent of Americans lived within 50 miles of a coast in 1988. This figure includes the population living along the Great Lakes and the St. Lawrence river. The percentage peaked in 1970 and declined until the mid-1980s, as shown in Table 1.

Why it declined and then increased in the last few years can be seen by looking at specific coastal areas. The shores of the Great Lakes are home to a declining proportion of Americans, as cities like Chicago, Buffalo, Rochester, and Erie lose population. Counties along the Pacific coast contain a growing proportion of Americans, and since the mid-1980s the proportion living along the Atlantic seaboard has increased. The proportion living along the Gulf of Mexico increased for several decades but has remained relatively stable in the last few years as growth slowed or changed to loss in Gulf Coast cities like Houston.

By 1988 about 12.3 percent of Americans lived within 50 miles of the

Table 1. Resident Population of Counties Within 50 Miles of Coastal Shorelines: 1940 to 1988

	Coterminous U.S. (total)	Counties in coastal regions					Balance of coterminous U.S.
		Total	Atlantic	Pacific	Great Lakes	Gulf of Mexico	
Population (millions)							
1940	131.7	60.5	29.9	7.5	18.9	4.2	71.2
1950	150.7	73.5	34.6	11.5	21.8	5.6	77.2
1960	178.5	92.7	41.7	16.8	26.4	7.8	85.7
1970	202.2	108.5	48.2	21.5	29.3	9.5	93.8
1980	225.2	118.4	50.7	25.4	29.8	12.6	106.7
1984	234.6	123.4	52.5	27.3	29.6	14.0	111.2
1985	238.8	125.0	53.1	28.0	29.6	14.3	113.8
1986	239.5	126.5	53.7	28.6	29.7	14.5	113.0
1987	241.8	128.0	54.4	29.3	29.8	14.6	113.8
1988	244.2	129.5	55.0	30.0	29.9	14.7	114.6
Percent distribution							
1940	100.0	45.9	22.7	5.7	14.4	3.2	54.1
1950	100.0	48.8	23.0	7.7	14.5	3.7	41.2
1960	100.0	51.9	23.4	9.4	14.8	4.4	48.0
1970	100.0	53.7	23.8	10.6	14.5	4.7	46.4
1980	100.0	52.6	22.5	11.3	13.2	5.6	47.4
1984	100.0	52.6	22.4	11.6	12.6	6.0	47.4
1985	100.0	52.3	22.2	11.7	12.4	5.9	47.7
1986	100.0	52.8	22.4	12.0	12.4	6.1	47.2
1987	100.0	52.9	22.5	12.1	12.3	6.0	47.1
1988	100.0	53.1	22.5	12.3	12.2	6.0	46.9

Notes. Excludes Alaska and Hawaii. Covers all counties and independent cities which are entirely or substantially within 50 miles of U.S. coastal shorelines. Great Lakes region includes St. Lawrence River.

Source. U.S. Bureau of the Census, *Statistical Abstract of the United States: 1980, 1986* and *1988* (Washington, D.C.: U.S. Government Printing Office) and unpublished data that will appear in a forthcoming issue of the *Statistical Abstract.*

Larry Long is with the Center
for Demographic Studies, U.S.
Bureau of the Census

Pacific Ocean; this figure excludes Alaska and Hawaii, but including them would raise the percentage only modestly. The percentage living along the Atlantic seaboard began to decline after 1970 because of slow growth or population decline in older ports like Boston, New York, and Baltimore; by the mid-1980s growth along Florida's Atlantic coast helped to raise the proportion of Americans living along the Atlantic seaboard to 22.5 percent. The population living within 50 miles of the Gulf of Mexico has held steady at about 6 percent of the U.S. population over the last few years.

These figures include many counties that have no coastline but whose populations are substantially within 50 miles of a coast. An example is San Bernardino County, which extends across southern California to the Arizona and Nevada borders; it does not reach the Pacific Ocean, but much of the San Bernardino population is clustered in the county's western tip, which reaches within 50 miles of the ocean. Counting the whole county as coastal includes the city of Needles—nearly 200 miles from an ocean. In general, Table 1 encompasses an expansive notion of how many people live within 50 miles of a coast.

California and Florida

Counties along the California coast are home to a growing proportion of Americans, but they are home to a declining proportion of Californians because growth has been shifting inland. Table 2 presents these statistics.

The proportion of Americans living in coastal counties of California rose from 4.4 percent in 1950 to 7.0 percent in 1988. In the 1950s these counties were, as a group, growing faster than the rest of California, but since then coastal counties have grown more slowly than the noncoastal counties. The proportion of Californians living in coastal counties rose to 65 percent in 1960 but declined to 61 percent by 1988.

Table 2. Shares of Population Living in Coastal Counties of California and Florida: 1950 to 1988

	1950	1960	1970	1980	1988
California					
Total population (in 1,000s)	10,586	15,717	19,971	23,667	28,314
Percent of California's population living in coastal counties	63.3	64.6	64.0	62.2	60.6
Percent of U.S. population living in coastal counties of California	4.4	5.7	6.3	6.5	7.0
Florida					
Total population (in 1,000s)	2,771	4,952	6,791	9,747	12,335
Percent of Florida's population living in coastal counties	67.0	69.9	71.7	71.2	71.2
Percent of U.S. population living in coastal counties of Florida	1.2	1.9	2.4	3.1	3.6

Source: Compiled from Census Reports, 1950 through 1980, and county population estimates for 1988, published in U.S. Bureau of the Census, *Current Population Reports*, Series P-26, No. 88-A (August 1989).

These figures are based only on counties that have a coastline.

Growth has shifted inland for some highly publicized reasons, particularly the escalating housing prices that have sent many families away from coastal areas in search of affordable housing. One ranking of U.S. metropolitan areas with *least* affordable housing found four of the top five on or near the California coast: San Francisco, Anaheim-Santa Ana, Los Angeles-Long Beach, and Santa Barbara-Santa Maria-Lompoc.[1] In northern California, this has meant that "Sacramento, 80 miles east of San Francisco and with a median house [priced] 50 percent lower, is fast becoming an extension of the San Francisco area."[2] In southern California, inland growth has sometimes pushed suburban homes to erosion-prone hillsides and into desert environments.

In Florida, too, the percent of population living in coastal counties may have peaked. Most of Florida's counties have a coastline, and the percent of Floridians living in them rose to 71.7 percent in 1970 but declined to 71.2 percent in 1980 and has been holding at that level since then (see Table 2). Florida's growth may be shifting inland for some of the same housing-related reasons as in California and because of the growth of noncoastal cities like Orlando and development around Disney World.

The population in coastal counties of Florida continues to grow faster than the national average, and by 1988, 3.6 percent of Americans lived in them according to the Census Bureau's procedures for determining usual residence. Surely the percentage of Americans to be found along Florida's coast is higher in the winter months when "snowbirds" and vacationers are present.

In the 1970s and 1980s all counties in Florida grew in population, whereas in the 1950s and 1960s several counties lost population. The spread of growth has more evenly distributed Florida's population among its counties. California's population has also become more evenly distributed among its counties.[3]

Population and Leisure

Growth that moves inland may still concentrate population near coastal areas. If 100 miles from a coast were chosen instead of 50 miles, America's population would probably more dramatically appear to be concentrating in coastal locations. Whatever distance is chosen, the environmental effects may depend as much on

Continued on next page

Demographer's Page

Continued from previous page

where people range as where they officially reside.

Increased leisure can provide more people with access to ecologically fragile areas, whether ski resorts, wilderness preserves, or coastal areas. Longer vacations are an obvious manifestation of greater leisure, but making holidays fall on Mondays or Fridays gives people longer weekends and expands the range of accessible locations. So do alternate work schedules that let people work 40 hours in four days instead of five. Earlier retirement and programs that support retirees' income mean more years of active life and more choices of where to live and vacation. Affluence in the form of condos and second homes in scenic locations has the same effect.

In the United States the population by the sea has been augmented by successive waves of immigrants disembarking at ports, but in recent decades changes in the location of economic activities and expanded use of air travel have shifted growth to landlocked areas like Atlanta, San Antonio, Dallas, and Phoenix. The proportion of Americans who live within 50 miles of the sea has grown only modestly in recent years, but the proportion who live there part of the time may have increased more dramatically.

Andrea Walter assisted in compiling data for this article, and Diana DeAre, Richard Forstall, and Robert Speaker provided illustrations of uses of data on coastal populations.

References

1. "Peoria, Ill., Is Top U.S. Market for Most Affordable Housing," *Washington Post*, December 2, 1989, p. E2.
2. Robert Reinhold, "Even in California, Finally, Real Estate is Not Hot," *New York Times*, December 10, 1989, p. E4.
3. The evenness with which population is distributed across areas can be measured by using the index of dissimilarity to compare the distribution of population and land area across a state's counties. This index declined for California and Florida in the 1970s and 1980s. See Larry Long and Diana DeAre, "Spatial Units and Trends in Population Concentration and Deconcentration in the United States," forthcoming in *Environment and Planning A*.

Contraceptive Push Urged

No fundamentally new contraceptive methods have been approved in the United States since the advent of the pill and the IUD in the 1960s.

Many auspicious approaches remain as far from reaching the market as ever, and the "perfect" contraceptive that is ideally safe, convenient, and effective has yet to be invented. The outlook for new or improved methods is cloudy; virtually all U.S. pharmaceutical companies have halted contraceptive research and development. Unless more research goes forward, contraceptive options in 2000 could be much the same as today's.

These are some of the conclusions of a major study on contraceptive development in the U.S., announced in February by the National Research Council of the National Academy of Sciences.

"Currently available methods," says the report, "are not well suited to the religious, social, economic, or health circumstances of many Americans," particularly men, older women, teenagers, and women who are breastfeeding. Partly as a result of this deficiency, the committee estimated, between 1.2 million and 3 million unwanted pregnancies occur in the United States each year.

Many promising methods await further study: injections, implants, transdermal patches, vaginal suppositories and rings, and under-the-tongue tablets, all of which theoretically could be ready during the 1990s. These methods would deliver contraceptive steroids into the bloodstream at a constant and lower rate than present methods such as the pill. Whether they get to market depends less on medical breakthroughs than on logistical and legal ones.

In Europe, meanwhile, a number of contraceptive methods not available in the U.S. are being used. These include contraceptive implants, new oral contraceptives, injectables, and antiprogesterones (RU 486).

Looking farther ahead, a male pill continues at the laboratory stage. "A contraceptive vaccine, for which much of the basic research has been completed, is not being developed at a rate that contraceptive research would allow," the report states.

Much of the study's concern centers over what it considers unnecessary legal obstacles that discourage drug manufacturers. The committee urged that the Food and Drug Administration's approval process be revised, and that product-liability laws be changed to give the nation stable and uniform national product-liability rules.

—A.H.

The report, *Developing New Contraceptives: Obstacles and Opportunities*, is available from the National Academy Press, 2101 Constitution Ave., N.W., Washington, DC 20418; phone 202-334-3313, or 1-800-624-6242. Price: $19.95 prepaid.

Cruz Named PRB Scholar

Maria Concepcion J. Cruz has been named PRB's Visiting Scholar for the 1990-1991 academic year.

Dr. Cruz is associate professor and former head of the Environmental Education Division of the Institute of Environmental Science and Management (IESAM) at the University of the Philippines at Los Banos. She has worked extensively on irrigation management issues, water rights, and upland production systems. Her most recent work has concentrated on population and forest resource development.

While at PRB, Dr. Cruz will examine the linkages between population change and environmental degradation. She will focus on key institutional mechanisms that mediate impact of population pressure on future sustainability of resources.

The Visiting Scholar Program is supported by the Andrew W. Mellon Foundation to enable distinguished professionals in the population field to carry out policy-oriented research at PRB's Washington headquarters. The program is designed to provide a unique career-development opportunity for deserving scholars while enhancing PRB's research resources and intellectual exchange.

Preventing U.S. Infant Deaths

An affluent, technological society with extensive medical services, the United States ranks only 20th in the world in infant mortality, writes Christiane B. Hale in PRB's latest *Population Trends and Public Policy* report.

In 1988, the U.S. rate was 9.9 infant deaths per 1,000 live births. In that year there were about 3.9 million live births in the U.S., and 38,700 infants died between birth and their first birthday. If the U.S. rate were equal to Sweden's (whose rate is a low 5.7), more than 17,000 infant lives would be saved annually.

One major determinant, says Hale, is low infant weight at birth. Low birth weight (LBW)—weighing less than 2500 grams or about 5.5 pounds at birth—is the most notable risk indicator of death in the first weeks of life. In the 1980s, seven percent of U.S. babies weighed less than 2500 grams, compared to 4 percent in Ireland and the Netherlands.

Health-care services can reduce the risk of low birth weight. But for many, access to such health services may be severely restricted by financial, geographic, and administrative barriers. Some beneficial health services that are common in other developed nations, such as postnatal home visits, are relatively rare in the U.S.

In many ways, according to Hale, the infant-mortality problem in the U.S. reflects a public ambivalence about the costs and benefits of health services. So the problem remains, with its costs both in human terms and in the expense of massive post hoc medical intervention.

—A.H.

Copies of "Infant Mortality: An American Tragedy," by Christiane B. Hale, No. 18 in PRB's *Population Trends and Public Policy*, can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling 1-800-877-9881. Visa and MasterCard accepted. Prices are: $5.00 a single copy, 2-10 copies $4.50 ea., 11-50 copies, $4.00 ea., 51 or more, $3.80 ea. Orders of $50.00 or less must be prepaid and include $1.00 or 3 percent of total order (whichever is greater) for postage and handling.

SOFTWARE

CD-ROM EndUser is a monthly magazine that covers the brave new world of CD-ROM disks for personal computers.

These economical plastic disks are each capable of permanently storing hundreds of millions of data bytes. So topics in the magazine's 56-page February issue include forthcoming 1990 Census products on CD-ROM, data on disk from the 1985 American Housing Survey (AHS) from HUD, and the POPLINE population database funded and distributed by the UN Population Fund (see *PT*, September 1989). Tips to readers are also provided, including advice on producing your very own CD-ROM data disk.

In April the publisher, DDRI, also plans to launch *CD-ROM Shoppers Guide*, a quarterly buyer's guide with listings of available CD-ROM products. In the meantime, besides serving as a guide for its eponymous readers, *CD-ROM EndUser*'s very existence shows just how specialized the U.S. magazine industry can be. (11,229 periodical titles were published in 1988, according to Gale Research.)

Subscriptions to *CD-Rom EndUser* are "free to qualified subscribers." For further information, contact: DDRI Inc., 510 N. Washington St., Suite 401, Falls Church, Va. 22046-3537; phone 703-237-0682.

—A.H.

POPULATION UPDATE

Estimated United States Population:

As of December 1, 1989	249,928,000
As of December 1, 1988	247,427,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1052.

Estimated World Population:

As of April 1990	5,303,000,000
Annual growth	93,000,000

Extrapolated from the mid-1989 population on PRB's *1989 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: November 1989

	12 months ending with November					
	Number		Rate			
Item	1989	1988	1989	1988	1987	1986
Live births	3,967,000	3,902,000	16.0	15.9	15.7	15.5
Deaths	2,141,000	2,169,000	8.6	8.8	8.7	8.7
Natural increase	1,826,000	1,733,000	7.4	7.1	7.0	6.8
Marriages	2,394,000	2,389,000	9.7	9.7	10.0	9.9
Divorces	1,161,000	1,174,000	4.7	4.8	4.8	4.8
Infant deaths	38,800	38,700	9.8	10.0	9.9	10.5
Population base (in millions)	...	...	248	245.4	243.1	240.8

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. Monthly Vital Statistics Report (Vol. 38, No. 11) from the National Center for Health Statistics.

TAKE A NUMBER

And the Number Is. . .: The Census Bureau recently issued a news release pointing out that U.S. resident population was estimated to have passed the quarter-billion mark on March 6, 1990—a somewhat courageous declaration considering that the decennial census is about to take center stage. The Bureau was quick to point out that a more accurate estimate of when that happened could be made after the results of the 1990 Census are known. But just how different might that new estimate be?

A decade ago, in June 1980, in the midst of the 1980 Census process, the Bureau issued its regular estimate of U.S. population for April 1, 1980 (Census Day). *Current Population Reports* (Series P-25, No. 887) gave a figure of 221,672,000 resident population, i.e., excluding armed forces overseas. At the end of 1980, the actual census count was duly reported to President Carter: 226,504,825. A total of 4.8 million "new" Americans had been found!

The 4.8 million (since changed to 4.6 million) figure is referred to by demographers as the "error of closure." Such an adjustment may be all too familiar to many of us when we balance our checkbooks. Every census has such an error. It simply means that the change in a country's population size from census to census cannot be completely accounted for by registered births and deaths and the accepted figure used for net immigration. But previously this error had never been anywhere near so large; the error had only been 300,000 in the 1960s and a paltry 3,000 in the 1950s.

The larger error can likely be attributed to improving census coverage and to illegal immigration not accounted for in the normal estimation process. Any change in the all-important denominator, U.S. population size, could have many consequences. For example, "per capita" or "per 1,000" type rates must be recalculated; the country's "balancing equation" of births minus deaths plus net immigration may require an uncomfortably large fix in order to balance; and there may yet be surprises in the numbers used to reapportion the 435 seats in the House of Representatives as equally as possible. Some states (including Wisconsin and Kentucky), whose proportion of the national population has probably gone down and which consequently are very close to losing a seat, have a vital stake in the results.

Perhaps the increase, if any, will not loom so conspicuously as happened a decade ago; during the 1980s, the Census Bureau has been careful to allow for illegal immigration in its estimates. It has also raised estimated *emigration* levels because the previous, standard assumptions of emigration are believed to be too low. Will such fine-tuning be confirmed by the 1990 head count? We'll know in nine months.

—C.H.

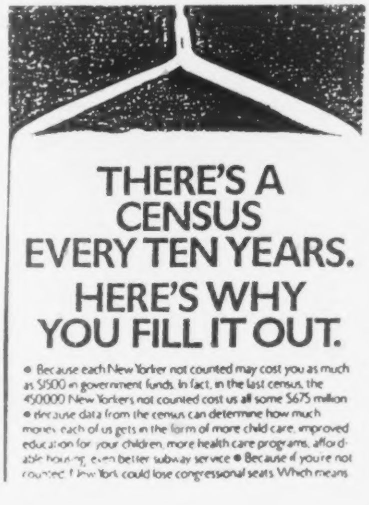
Clarification

The authors of *Atlas of Mexico*, published by Westview Press, 1989 (reviewed in *PT*, January 1990) wish to point out that data from the 1976-1977 World Fertility Survey data were used in the Atlas because they were the most recent reliable statistics then available. The 1987 Demographic and Health Survey was not used because actual publication of its data postdated the publication of the Atlas itself. Release of the 1980 Mexican Census state data was not completed until 1985.

POSITIONS/ PROFESSIONALS

Senior Research Associate and Research Associate, Committee on Population, National Research Council. *Requirements:* for Senior Research Associate, PhD or equivalent, plus four years of research experience, especially with indirect estimation and multivariate techniques. Ability to speak French and experience in Africa desirable. For Research Associate, MA/MS or equivalent, plus four years experience or equivalent, ability to interpret research results and experience in the preparation of scientific reports, budgets, and proposals. *Contact:* Send curriculum vitae and the names of three references to National Research Council, Committee on Population (HA 176-LM), 2101 Constitution Ave., N.W., Washington, D.C. 20418. EOE.

ADDENDA



THERE'S A CENSUS EVERY TEN YEARS. HERE'S WHY YOU FILL IT OUT.

• Because each New Yorker not counted may cost you as much as $1500 in government funds. In fact, in the last census, the 450000 New Yorkers not counted cost us all some $675 million • Because data from the census can determine how much money each of us gets in the form of more child care, improved education for your children, more health care programs, affordable housing, even better subway service • Because if you're not counted, New York could lose congressional seats. Which means

Even when you're peacefully sitting down to your morning cereal, you can't get away from it. To promote the 1990 Census, the U.S. Census Bureau has been reaching out even via milk cartons (this one a Goya quart of homogenized from New York City).

CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

DIFFERENTIAL MORTALITY: Methodological Issues and Biosocial Factors, edited by Lado Ruzicka, Guillaume Wunsch, and Penny Kane. International Studies in Demography, International Union for the Scientific Study of Population (IUSSP). Oxford: Clarendon Press, 1989. 259 pages. $59.00. ISBN 0-19-828651-1.

This book compiles the selected papers presented at the IUSSP-NIRA Joint Seminar on Biological and Social Correlates of Mortality, November 24-27, 1984, Tokyo. The meeting concentrated on the conditions which sustain the high level of mortality found in many less developed countries.

Both the mortality transition in the past, and biological and socioeconomic factors that affected the mortality transition may have important implications for future national health programs and development strategies. However, identifying particular causal relationships properly between observed mortality transition and factors which are often highly correlated with each other is not an easy task.

The introductory paper by Ruzicka presents the methodological and conceptual problems in the study of mortality differential; Duchene and Wunsh explore several possible frameworks for the causal relationship; Gray discusses how one can integrate the demographic studies (i.e., underlying socioeconomic determinants of mortality) with epidemiological studies (i.e., risk factors, disease process and prevention) to provide better indicators for the determinants of morbidity and mortality; Horiuchi addresses the problems of spurious mortality change resulting from structural population changes, and the inconsistency of data quality through time. Variations in the mortality transition among seven Latin American countries and four South and East Asian countries from the 1950s to the 1970s are analyzed by Arriaga using his new method; Utomo and Iskandar's study on Indonesia and Fisek's study on Turkey depict the social, economic, and cultural systems that facilitate or obstruct transition; and Myers examines the issues surrounding current mortality reduction at older ages among developed countries and discusses the social and individual implications of these trends.

—*Machiko Yanagishita*

IN THE U.S. INTEREST: Resources, Growth and Security in the Developing World, edited by Janet Welsh Brown. A World Resources Institute Book. Boulder, Colo.: Westview Press, 1990. 228 pages. $19.95. ISBN 08133-1053-9.

This volume, produced by the World Resources Institute, is the final product of a five-year project, "U.S. Stake in Global Resources Issues."

Its basic premise is the increasing interdependence of countries; thus, negative trends in the developing world will affect us negatively if we do not participate in positive solutions. The particular trends highlighted in the volume are environmental degradation and political instability, both of which are exacerbated by rapid population growth.

Four case studies—Mexico, the Philippines, Egypt, and Kenya—form the core of the volume. These four were picked to represent countries whose stability is vital to U.S. interests: "the United States's southern neighbor and third most important trading partner, Southeast Asia's most firmly committed democracy, North Africa's most populous and powerful state and the East African country with perhaps the most promising future."

Each of the case studies gives a brief overview of the political/economic/demographic situation of the country under study then focuses on one particular aspect. The chapter on Mexico, for example, highlights the heavy and unsafe use of pesticides on crops grown for export to the U.S. with negative effects both on the farm workers and the consumers. The case studies are well written and clearly focused, illuminating an important range of resource and population issues.

The volume also offers an array of policy options, particularly proposals for foreign aid that will support sustainable development. These range from restructuring the foreign assistance legislation to separate security, political, and development goals for specific forestry and agricultural programs. These thought-provoking ideas would be helpful in shaping strategies for future U.S. foreign assistance.

—*Nancy Yinger*

Book Received

RETURN TO AZTLAN: The Social Process of International Migration from Western Mexico, by D. Massey, R. Alarcon, J. Durand, and H. Gonzalez. Berkeley: University of California Press, 1987.

SPOTLIGHT

ECUADOR

Population (1989 est.): 10.5 million
Land area: 109,480 sq. miles
Births per 1,000 pop.: 33
Deaths per 1,000 pop.: 8
Rate of natural increase: 2.6 percent
Total fertility rate: 4.3 children per woman
Infant mortality rate (1989 est.): 63 deaths per 1,000 live births
Life expectancy at birth: 65 years
GNP per capita (1988 est.): $1,080
Capital: Quito

by Alex de Sherbinin

Despite its proximity to the drug-trafficking problems and political instability of neighboring Colombia (to the north) and Peru (to the south), Nevada-sized Ecuador appears an "island" of tranquility in tropical South America.

Geographically, the country is divided into three distinct regions. The signature landscape of Ecuador is the Andean cordillera which runs north-south through the center of the country. The temperate climate and fertile inter-montane valleys of this highland environment are where half of Ecuador's 10 million inhabitants are concentrated, over 1 million of whom reside in the capital Quito.

The coastal lowlands region to the West of the highlands is dry and hot to the south, becoming more humid to the north. Coastal Guayaquil, Ecuador's largest city, is an emblem of the rapid if not chaotic growth that this region has experienced in the past 20 years as migrants have fled the highlands in search of greater economic opportunity. Though still small and underpopulated in comparison, Ecuador's third region, the densely forested Amazon basin or *oriente*, is vying with the coast as the new land of opportunity.

Until the 1960s, Ecuador had a predominantly agriculturally based economy with large-scale plantations on the coast and peasant-based *latifundias* in the sierra. The country remains the world's number-one exporter of bananas, but in recent years economic growth has been buoyed more by petroleum exports and exploitation of its excellent offshore fishing grounds. Much to the chagrin of environmentalists, a trans-Andean pipeline has encouraged further oil exploration in the *oriente*, increasing damage to the region's delicate ecosystem and enticing more would-be migrants out of the highlands.

The national economy is relatively stable, if not robust. However, a 2.6 percent population growth rate (down from [illegible] percent in 1970-1975) and a projected doubling of the work force in the next 30 years (from 3.3 to 7.2 million) will undoubtedly present economic challenges.

Population growth is considered too high by the present government, but the issue has become somewhat politicized. A recent article in a Guayaquil newspaper quoted the minister of planning as saying that given the resource base of the country, continued growth is in fact desirable. The government's position one way or the other has not prevented family planning efforts from proceeding apace. Indeed, the largest dispenser of family planning services, reaching 36 percent of contraceptive users, is the Ministry of Health, followed by independent doctors and clinics (34 percent) and IPPF's affiliate APROFE (6 percent).

The average number of children born to women over 45 is 6, whereas the current total fertility rate (TFR) for women 15 to 45 is 4.3, and the perceived ideal family size for the same group is 3.0. TFRs are higher in rural versus urban areas (5.5 and 3.5 respectively), but there is surprising uniformity between highland and the coast.

Efforts are being made in both regions to increase accessibility to family planning services in rural areas, through sponsorship of young doctors in the countryside, and collaboration with mobile health consultants.

Alex de Sherbinin

Ecuadoran girls are happy.

23750-1

POPULATION TODAY

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Almost . . . 2.0! (See page 2.)

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FROM THE EDITOR'S DESK

It's coming, it's coming, it's *almost* here.

"It" is a total fertility rate (TFR) of 2.0 average lifetime births per woman. The U.S. has not seen 2.0 since 1972.

Because of changing social and economic trends and the contraceptive revolution, the TFR has dropped steadily since the early 1960s, until a low of 1.7 was reached in 1976. Since that year, the TFR has coasted at about 1.8.

The TFR is a synthetic measure. It does not track the actual lifetime fertility of a group of women; rather it takes a "snapshot" of a society's fertility based on age-specific fertility rates at a moment in time. Many demographers theorize that one reason for its relatively low level is women whose low fertility was in part due to their deciding to delay childbearing. Their plans did not show up in the "snapshot."

Now, rumors persist that when the counting is complete for 1989 fertility measures, the U.S. TFR is likely to *round* to 2.0 (that is, it will be 1.95 or higher). And the figures suggest that delayed childbearing does seem to have been a factor in the low TFRs of the 1970s and early 1980s.

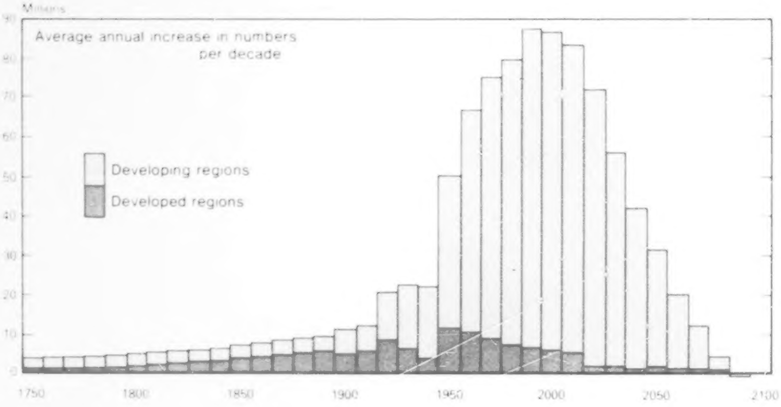
Not only is 2.0 looming, but according to provisional figures, 1989 was the first year since 1964 to report 4 million births. (See "Population Update," page 9.) From 1954 to 1964, during the bumper years of the post-World War II baby boom, the U.S. had an unbroken run of eleven 4-million-birth years. Those new arrivals helped boost the national population from 163 million to 192 million.

These two "magic" numbers—2.0 and 4 million—may be a random ripple or an epochal watershed. Will they now increase, decline, or stabilize? At this juncture we have no idea.

—Art Haupt

SPEAKING GRAPHICALLY

World Population: Average Annual Increase for Each Decade, 1750-2100 (Projected)



The above bar graph depicts world population growth past and future by showing each decade's total increase (expressed as the average annual increase over that decade). As can be seen, the 1990s are projected to be the historic peak decade of population growth in terms of absolute numbers.

Source "World Population in Transition," *Population Bulletin*, by Thomas W. Merrick and PRB staff.

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S-Night: Counting the Homeless

Art Haupt

A mobile soup kitchen distributes meals on the streets.

The word *homeless* never appears in census enumeration interviews. Nor do census forms have any checkoff box for "Street Person." Nonetheless, S-Night, the night of March 20-21, 1990, marked the most intense effort ever to include America's homeless in the decennial census.

Previous censuses had included a "casual count" operation, under which enumerators had tallied people in transient situations such as missions or flophouses. But this year, on S-Night (also known as Streets and Shelters Night), census workers across the U.S. fanned out to canvass city streets, freeway overpasses, and (from the outside) abandoned buildings—anywhere homeless people were likely to take shelter.

This census of the homeless—one of the many operations of the 1990 Census—was not without controversy. Some advocates for the homeless tried to block the count in some shelters, on grounds that it would inevitably result in an undercount and allow officials to assert there were fewer homeless than claimed. (In recent years, estimates of the homeless population, have ranged from 250,000-350,000 to 1.5 million-3 million.)

On the eve of S-Night, Washington, D.C. was even the site for a symbolic statistical protest. Homeless advocates dumped a pile of sand in front of the Department of Commerce on 14th Street. A placard posted atop the mound read: LIKE GRAINS OF SAND, THE HOMELESS CAN'T BE COUNTED. (In fact, estimating the number of sand grains in a sand pile would be a snap for statisticians, once they agreed on what defines a single sand grain.)

In 1991 and beyond, when detailed 1990 Census data become available, researchers will be able to extract detailed statistics on characteristics of people living in shelters, low-cost hotels, and other group quarters. (Data on characteristics of people enumerated on the street will of necessity be less detailed.) In addition to S-Night data, the April 1 Census of housing units will provide statistics on people who may be considered precariously housed (e.g., "doubled up" with other families or otherwise sharing living quarters).

Shelters and Streets

On S-Night, two New York City census takers were shot at. In a number of cities, enumerators were dogged by television and print journalists, to the extent that journalistic hovering caused some interviews to be broken off to preserve confidentiality. (Conveniently, world and national news events took a holiday during late March, enabling S-Night to be widely featured in the media. S-Night probably got more coverage than did Census Day, April 1, a week and a half later.)

The March 20-21 count involved an estimated 15,000 census workers and cost $2.7 million. In many places, including Washington, the count had to be extended to the next night because of the number of places to be checked and the limited number of personnel available.

The Bureau's strong suit in taking a census is its massive coast-to-coast address lists. Once you have in hand a good address of a dwelling unit, that unit remains on your to-do list until the paperwork comes in to indicate that it's been taken care of.

To prepare for S-Night, the Bureau compiled lists of shelters, commercial spaces, and street areas where the homeless were believed to frequent. But these sites, particularly the street areas, are by definition more ephemeral as residences than addresses of single-family dwellings.

Most census workers earned about $7.50 per hour and received one day's training to master the Census Bureau's paper-management drill. They were specifically instructed to dress casually (absolutely no ties), and their only uniform was the official Census Bureau safety vest (available in white or red). Whatever aura of authority they possessed derived from the red-white-and-blue enumerator ID badges clipped to their jackets.

The Individual Census Report that the workers passed out to S-Night respondents resembled the regular census form, minus housing questions. Like the regular form, the ICR comes in short (seven questions) and long (33 questions) versions. In the shelters, every sixth respondent was given the long form. Out on the streets, enumerators briefly interviewed respondents and wrote down their answers on the short form.

By all accounts, shelter occupants were cooperative—in the world of the poor and the dispossessed, if nowhere else, the good name of the U.S.

Continued on next page

Homeless Count

Continued from previous page

Government retains a certain charisma that encourages cooperation, notwithstanding the fact that census workers were guests of the shelter and had been instructed never, ever to browbeat anyone with his or her legal obligation to answer the census. Only in rare instances did shelter people flat-out refuse to fill out the form.

More commonly heard was a grassroots skepticism as to whether the personal data were *really* confidential and wouldn't be passed to any and all activities of the U.S. Government. (The census enumerators' calling card—the first item they handed respondents—was an English/Spanish handbill describing the privacy safeguards protecting respondents' answers. As they labored to explain, census data are totally confidential, are used for statistical purposes only, and are never passed to any other government agency.)

Finally, the 33-question ICR must surely have been a conversation stopper in many shelters, asking as it does a multitude of income-and-recent-work questions of people who in many cases have had all too little of either.

April 1 and After

While a major operation in its own right, S-Night was just the opening skirmish of the 1990 Census as a whole. April 1—Census Day—when the long and short forms for the nation's 100-million-plus dwelling units were due to be mailed back, was the major front. Now comes the mopping-up, which continues through Spring 1990 as census workers use phone or personal visits to chase down, on a one-to-one basis, those census forms that were delivered but are not shown as having been logged back in.

In mid-April 1990 the nonresponse follow-up gets rolling in earnest, and a total of 440,000 to 480,000 workers are expected to come aboard (not all at the same time), for mostly six- to eight-week stints. If all goes well, this phase of the operation should be virtually completed by mid-July.

—*A.H.*

WASHINGTON WATCH

As the 101st Congress moved into its second session and into the 1990s, much of the legislative activity around international population assistance programs was similar to action on these issues in recent years. The two main topics in the beginning of 1990, as was the case in 1987, 1988, and 1989, were: debate over the so-called "Mexico City policy" regarding abortion and consideration of renewed U.S. funding to the United Nation's population program.

Both these issues are strongly influenced by the domestic political imbroglio between prochoice and prolife groups over abortion rights. The debates on these issues are emotional, highly political, and involve large citizen lobbying coalitions.

In the first session of the 101st Congress during 1989, a $14.7 billion foreign aid appropriations bill for Fiscal Year 1990 was agreed to by the Bush Administration and the House and Senate; $220 million of the bill was assigned to the international population assistance program, an increase over the $197 million level of the 1989 bill. However, the 1990 foreign aid bill was agreed to only after heated debate over a controversial amendment to restore funding to UNFPA.

Aid for UNFPA?

In the first session, Congress approved a foreign aid bill containing an earmark for the United Nations Population Fund (UNFPA). President Bush vetoed the bill, on the grounds that UNFPA had continued its financial support of China's family planning program, which has been accused of coercive abortion practices. The alleged policies, denied by the Chinese, resulted in withdrawal of U.S. funding from UNFPA programs in 1985—the U.S. provided about 20 percent of UNFPA's budget in 1984.

In February 1990, Rep. Peter Kostmayer (D-Pa.) introduced a bill, HR 4075, "to authorize increased funding for international population assistance and to provide a United States contribution to the United Nations Population Fund."

The bill calls for $500 million from the FY 1991 foreign aid bill to be used for international population assistance. Of this $500 million, the bill allocates $60 million, or 16 percent of the overall population amount, whichever is less, to be contributed to UNFPA.

The UNFPA contribution also carries three conditions for the funding process:

1. The contribution to UNFPA must be kept in a separate, segregated account.
2. None of the funds may be used for China.
3. UNFPA must return the contribution if it uses any of the funds in China or for abortion.

As of March 26, the bill had 106 congressional cosponsors, but no House hearings on the bill had been either held or were scheduled. The House Foreign Affairs Committee was not expected to consider the bill this session.

In a surprise move, however, Rep. Kostmayer on March 28 introduced a UNFPA amendment for Romania during consideration of a House supplemental authorization for Eastern Europe (HR 4445). By a vote of 21 to 8, the committee members approved allocations of $500,000 each to UNFPA and the International Planned Parenthood Federation (IPPF) to provide family planning services in Romania. The U.S. had also stopped its funding to most of IPPF in 1985.

Next, the UNFPA amendment will be considered by the Foreign Operations Subcommittee of the House Appropriations Committee before possibly moving on to the full House for consideration. In addition, HR 4075 is likely to be introduced either before the House Foreign Operations Subcommittee or later on the floor of the full House.

Mexico City Policy Hearing

In 1984, at the International Population Conference in Mexico City, the Reagan Administration initiated what came to be known as the Mexico City policy, which denies U.S. funds to foreign, nongovernmental organizations that provide any abortion-related services or information, even with their own funds.

Last year, in the House Foreign Affairs Committee, Reps. Chester Atkins (D-Mass.) and Olympia Snowe (R-Me.) introduced a bill (HR 720) that would negate Mexico City by calling on U.S. guidelines for funding of family planning programs to be the same for international programs as they are for domestic ones.

In the first session of the 101st Congress, a hearing on the bill produced spirited debate by House members and national leaders of the prochoice and prolife communities. In January 1990, the bill was reintroduced. Backers of the Atkins-Snowe bill had not expected any further hearings on the bill before the House Foreign Affairs Committee, which is chaired by Rep. Dante Fascell (D-Fla.).

However, during the same House Foreign Affairs Committee hearing that produced the IPPF and UNFPA funding for Romania, Rep. Kostmayer also introduced the Atkins-Snowe bill as an amendment to the supplemental authorization bill, and it was also approved, 17 to 10.

The Bush Administration has often expressed its opposition to repeal of the Mexico City policy, and a vigorous fight over the Atkins-Snowe language is now expected to ensue.

—Mark Haskell

Mark Haskell is international program officer in the Washington, D.C. office of the Population Resource Center. The Center monitors legislative issues of concern to the Population Association of America. Neither the Center nor the Association advocates any particular population policy but works to protect funding for quality demographic research.

SURVEY REPORT

Togo

The Togolese Republic, a long, narrow Western Africa country of 3.3 million people, is growing almost 3 percent per year. Although the government does not have an official population policy, family well-being is promoted through an integrated maternal/child health and family planning program of the Ministry of Health, as well as through a private organization, ATBEF.

These efforts to promote child spacing are just beginning to have an effect on maternal and child health, according to the results from the 1988 Demographic and Health Survey in Togo (Enquête Démographique et de Santé au Togo, EDST).

At current total fertility rates (TFR), Togolese women will have an average of 6.6 children each during their reproductive lives. Although this rate is almost unchanged from 1961's TFR of 6.4, fertility varies according to a woman's level of education and, especially, her place of residence.

The TFR for women with no education is 6.8 children, and for those with at least a secondary education, it is 4.5. Fertility is also lower among women in urban areas, especially in the capital of Lomé where the TFR is 4.1. By contrast, women in the northern Savanna region have a TFR of 8.3.

Knowledge of contraception is low in Togo. Although more than nine in 10 married women had heard of a contraceptive method, less than half of these women could spontaneously recall a method. Women in urban areas and more educated women were more likely to be able to name a modern method than other women.

Almost three-quarters of married women have practiced family planning at some time, while 10 percent have ever tried a modern contraceptive method. Thirty-four percent of married women are currently using a method of family planning; only 3 percent are using a modern one. The most commonly used method is prolonged abstinence (22 percent), followed by periodic abstinence (6 percent), and withdrawal (2 percent). Fewer than 1 percent of married women are using an IUD or have been sterilized.

Roughly equal proportions of those women using modern methods turn to the public and private sectors for services and supplies. Public hospitals serve almost four in 10 users of modern methods, and pharmacies supply about one in four users.

Reasons for not using contraception, given by women judged to be at risk of pregnancy (nonpregnant nonusers), indicate insufficient knowledge of family planning. Twenty-two percent said they lacked information about contraception, 9 percent considered contraception bad for their health, and 8 percent said their husbands were opposed.

Communication between spouses about family planning is very limited. About three in five married couples had not discussed family planning in the year prior to the survey. While almost 70 percent of married women recognizing a method say they approve of couples who use family planning, less than half think their husbands approve.

Fifty-two percent of married women may be in need of family planning because they are fertile, not contracepting, and either want no more children (15 percent) or do not wish to become pregnant soon (37 percent). Less than half of these women say they intend to use family planning in the future.

—B.S.

DEMOGRAPHER'S PAGE

Focus On Maternal Mortality

by Nancy Yinger

Allan Rosenfield and Deborah Maine wrote a widely cited article entitled "Maternal Mortality—a Neglected Tragedy: Where is the M in MCH?" in the July 13, 1985, issue of *The Lancet*. The authors expressed concern that the search for ways to reduce high maternal mortality in the developing world had been lost under the (justifiable) avalanche of concern about high infant mortality.

Many programs seemed to assume that what is good for the child is good for the mother. Although some programs can reduce both maternal and infant mortality, most notably family planning programs, Rosenfield and Maine point out that "not only are the causes of maternal death quite different from those of child death but so are the potential remedies."

Definitions and Data

Because of the lack of focus on maternal mortality, information on levels and trends is of poor quality. There are many reasons for this, beginning with inconsistent definitions and/or biased, incomplete data.

To construct maternal mortality rates, the number of maternal deaths (the numerator) should be related to the total number of pregnancies (the denominator). Defining the component parts is not necessarily straightforward. The number of live births is generally assumed to be an acceptable indicator of the number of pregnancies and thus a reasonable estimate for the denominator. However, the denominator will be incomplete to the extent that pregnancies resulting in fetal death are not recorded. High induced abortion rates can also lead to bias in the denominator.

The numerator should include all deaths due to pregnancy and childbirth—deaths taking place before, during, *and* after childbirth. However, women whose pregnancy results in a spontaneous abortion anytime during the first 28 weeks are usually not included in the population at risk of dying from a maternal cause. In addition, not all maternal deaths are due to conditions resulting directly from pregnancy. Some are caused by preexisting conditions which are aggravated by pregnancy.

And what about deaths to pregnant women from accidental or incidental causes? Under the definition quoted in the accompanying box, these deaths should not be included in maternal mortality statistics. However, that convention is not always followed and sometimes the death of any pregnant woman, regardless of cause is counted as a maternal death.[1] Maternal mortality thus defined is a "time of death" measure, analogous to infant morality, which can subsequently be analyzed by cause.[2]

Since it may not be clear whether accidental deaths are being included in the numerator, comparisons using potentially inconsistent definitions should be taken as general trends only. Even given the use of consistent definitions, comparisons over time and place are difficult because the total number of maternal deaths is a function of two variables—fertility (the number of women exposed to the risk of pregnancy) and maternal mortality (of those pregnant, the number exposed to the risk of dying). A reduction in either component can effect a reduction in the proportion of women dying from maternal causes. (See Figure 1.)

In addition to inconsistent definitions, analysts are faced with a paucity of data on maternal mortality. A widely cited source is a 1985 study conducted at the World Health Organization that calculates roughly 500,000 women die each year of maternal causes.[3] This estimate, still the most widely used number of maternal deaths per year, amounts to 1 percent of all deaths worldwide.

The study gives maternal-mortality rates (deaths per 100,000 live births) for national and subnational surveys as well as hospital-based studies for as many years as possible. Despite the many data sources cited in the document, one is still struck by the spotty coverage and by the inconsistencies between sources for many countries.

WHO's Definition of Maternal Death

A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Maternal deaths are divided into two groups: 1) direct obstetric deaths: those resulting from obstetric complications of the pregnant state (pregnancy, labor, and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above; 2) indirect obstetric deaths: those resulting from previous existing disease or diseases that developed during pregnancy and which were not due to direct obstetric causes but which were aggravated by physiological effects of pregnancy.

Source. World Health Organization, *International Classification of Diseases*, 9th revision, Geneva, WHO, 1977.

Nancy Yinger
is Associate Director of
the IMPACT Project at PRB

Table 1. Estimates of Maternal Mortality, by Region

Region	Number of maternal deaths (thousands)	Maternal-mortality rate (per 100,000 live births)
Africa	**150**	**640**
North	24	500
West	54	700
East	46	660
Central	18	690
Southern	8	570
Asia	**308**	**420**
West	14	340
South	230	650
Southeast	52	420
East	12	55
Latin America	**34**	**270**
Central	9	240
Caribbean	2	220
Tropical South	22	310
Temperate South	1	110
Oceania	**2**	**100**
Developing countries	**494**	**450**
Developed countries	**6**	**30**
WORLD	**500**	**390**

Source. Adapted from "Maternal Mortality Rates: A Tabulation of Available Information," Geneva, World Health Organization, 1985, as shown in Ann Starrs, "Preventing the Tragedy of Maternal Deaths: A Report on the International Safe Motherhood Conference," Nairobi, Kenya, February 1987.

In India, for example, one source for 1978 estimates 480 maternal deaths per 100,000 live births while another estimates 1,250 deaths per 100,000 births.

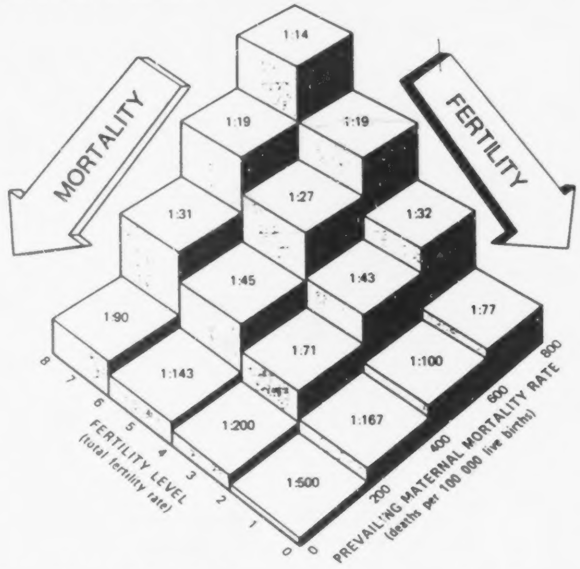
One is also struck by the vast difference in rates between the developing and developed world, a difference much greater than for other mortality measures. Table 1 provides a regional breakdown and shows that of the 500,000 maternal-mortality deaths each year, only about 1 percent (6,000) occur in the developed world. In contrast, about 11 percent of infant deaths take place in the developed world. In addition, while maternal mortality rates estimate the risk of dying for any given pregnancy, women in developing countries face this risk many times and thus are exposed to a very high lifetime risk of dying from maternal causes. (See Table 2.)

Table 2. Estimated Lifetime Chance of Dying from Pregnancy-Related Causes, by Region, 1975-1984

Region	Lifetime chance of maternal death
Africa	1 in 21
Asia	1 in 54
South America	1 in 73
Caribbean	1 in 140
North America	1 in 6,366
Northern Europe	1 in 9,850

Source. Calculated by Dr. Roger Rochat, Emory University School of Medicine, Master in Public Health Program, using maternal-mortality rates from the World Health Organization and total fertility rates from PRB; in Barbara Herz and Anthony R. Measham, *The Safe Motherhood Initiative: Proposals for Action,* Washington, D.C., World Bank, 1987.

Figure 1. Lifetime Risk of Dying from Pregnancy-Related Causes



Source. Figure 9.2 from Erica Royston and Sue Armstrong (Eds.), *Preventing Maternal Deaths.* Geneva: World Health Organization, 1989. Reproduced by permission.

Causes of Maternal Death

The biggest tragedy of maternal mortality is that many of the deaths result from unsafe and often illegal abortions or from complications which could be prevented by proper screening and access to health care and family planning. There are five primary complications that lead to direct obstetric death:

1. **Hemorrhage,** bleeding near the end of pregnancy or at delivery is most common among older women with many children. Where blood transfusion is not available, hemorrhage may be fatal.

2. **Toxemia** is a condition which includes swelling of the feet and hands, high blood pressure, and protein in the urine. It is more likely for women having their first child. While early diagnosis and treatment can greatly lower the risk of death, untreated toxemia can lead to seizures and death.

3. **Sepsis,** infection usually due to complications from an obstructed or difficult delivery, is also caused by unsanitary conditions during delivery.

4. **Septic abortions** often occur with clandestine or traditional abortion methods. Infections can result, leading to sterility or death.

5. **Obstructed labor,** which may lead to hemorrhage or sepsis, results from a birth canal blocked either by small pelvic size or previous injury. Where cesarean section is not available, obstructed labor may be fatal.

Programs That Can Work

If Rosenfield and Maine were to update their article today, they would probably be able to revise their title. Maternal mortality is still a tragedy—but it is a less-neglected tragedy. In the last half of the 1980s, the international health community has begun putting the "M" back in MCH.[4] The 1987 Safe Motherhood Conference recommended a three-pronged approach to reducing maternal mortality:[5]

1. **Stronger community-based**

Continued on page 9

Fertility Around World Shows Surprises

Some remarkable fertility declines have been reported in the developing world, including Bangladesh and Egypt. At the same time, some industrialized countries have displayed some equally surprising fertility increases that confound the conventional zero-growth stereotype of the industrialized world.

Many of the numbers tell a story on the just-published *1990 World Population Data Sheet*, PRB's annual wall chart of detailed data for 175 countries of the world. The Data Sheet, an 18½- × 24-inch chart of demographic and economic measures, projects a world population of 5.321 billion, as of July 1, 1990. The world, which reached 5 billion in 1987, is now almost one-third of the way between 5 and 6 billion. See "Take a Number" (page 10 of this issue) for the absolute numbers behind this year's Data Sheet.

The annual Data Sheet was prepared by PRB demographers Carl Haub, Mary M. Kent, and Machiko Yanagishita. Some population highlights of 1990:

Bangladesh. Preliminary data from the 1989 Bangladesh Fertility Survey indicate a total fertility rate (TFR) of 4.9 lifetime children per woman—2 children fewer than a decade ago. Furthermore, desired family size has dropped in a similar fashion, down to 2.9 children.

The world's ninth most populous nation with a population of 115 million, Bangladesh has historically experienced very high fertility, with women having 6.7 lifetime children on average as recently as 1975-1980.

Although further evaluation is called for, as it stands the newly released TFR figure of 4.9 seems to indicate that the decline that began in the late 1970s and early 1980s picked up speed during the decade. The even lower desired family size suggests that there is room for more fertility decline in Bangladesh.

South Korea. This East Asian country now shows a TFR of just 1.6 children per woman—a figure that would be low for a highly industrialized European country. This follows the 1988 survey conducted by the Korea Institution for Population and Health (see *PT*, September 1989) and can be accounted for by Korea's rapid industrialization and its government's activist approach to family planning.

1990

World Population Data Sheet of the Population Reference Bureau, Inc.

China. Since its rapid 1980s fertility plunge following the promulgation of the one-child policy in 1979, China has hovered in the 2.2-2.5 TFR range. The most recent figure is 2.3.

In July 1990, China will conduct a new population census. China's 1982 Census was enormously successful—the country's first wide-ranging, and extensively published, enumeration. With statistics from a new 1990 Census to compare and contrast with 1982's data cornucopia, demographers will be able to track population trends over time in the world's most populous country, which now contains 1.12 billion people.

India. The world's second-most populous country now stands at 853 million. Its crude birth rate has dropped a point, to 32 births per 1,000 population; its total fertility rate is down a little, to 4.2.

Egypt. This North African country, which contains 55 million people, has experienced a drop in TFR to 4.7. This has been enough to help pull down the TFR for the North Africa region as a whole, from 5.6 in 1989 to 5.2.

Kenya. Often labeled the country with the world's highest fertility (which it may never have been), this East African nation has shown a sharp decline, to 6.7 average lifetime children per woman. The "highest fertility" title is more likely held by another East African country, Rwanda, with a TFR of 8.3.

Meanwhile, in the MDCs

The more developed countries (MDCs), which contain about 22 percent of the world's population, provide other demographic highlights on this year's Data Sheet:

The United States. The Data Sheet now pegs the U.S. TFR at 2.0, the first time the U.S. has seen the "2" level since 1972.

For the first time in years, the U.S. and its northern neighbor Canada, which often seem statistical twins, are diverging in fertility. While the U.S.'s TFR is 2.0, Canada's remains in the 1.7 range.

Japan. Fertility continues to decline in this island nation, which ranks seventh in the world with a population of 124 million. The TFR for 1989 is 1.6.

Europe as a whole. Demographically, the European countries can be categorized in three rough groups according to current fertility trends:

1. *The decliners*—those countries that show steady decline in the direction of the seeming lower limits of MDC fertility (for example, Greece, Ireland, Poland).
2. *The stalled*—those that have already reached their own national fertility "floor" (what level constitutes this floor may be different for different countries) and seem to be holding there (for example, Austria, France, Italy, and the United Kingdom).
3. *The rebounders*—countries that bottomed out years ago, some at very low levels, but now seem headed back upward (for example, Finland, Iceland, Sweden, and West Germany).

The present situation, while complex, in many ways defies the popular stereotype of a low-fertility Northern Europe and a high-fertility Southern one. Sweden (with a TFR of 2.0), Norway (1.8), and Finland (1.7) have significantly higher fertility than Portugal (1.6), Spain (1.5), and Italy (at 1.3, the world's lowest national TFR).

The Data Sheet contains 15

columns of data, including contraceptive prevalence by country and national-government policy on population, where available. It is also available on diskette for IBM PCs and compatibles.

—*A.H.*

Copies of the *1990 World Population Data Sheet* can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling (800) 877-9881. Visa and MasterCard accepted. Prices for the Data Sheet are: $3.00 a single copy; 2-10 copies, $2.75 ea.; 11-50 copies, $2.50 ea.; 51 or more, $2.25 ea.

Orders of $50.00 or less must be prepaid and include $1.00 or 3 percent of total order (whichever is greater) for postage and handling.

The price for the *1990 World Population Data Sheet* on diskette for IBM PCs and compatibles is: $10.00 ea., plus $1.00 for postage and handling. Specify file version (Lotus 1-2-3 version 1A, version 2, or an ASCII file) and diskette type (either 5¼- or 3½-inch diskette) when ordering.

Demographer's Page

Continued from page 7

health care that relies on nonphysician health workers to screen pregnant women, refer high-risk cases for timely help, and provide "preventive" services such as family planning.

2. **Stronger referral services** to serve as backup to community-based care.

3. **An "alarm" and transport system** to transfer women with high-risk pregnancies from the community to the referral facility in time for effective treatment.

Notes

1. E.g., *Report of a working group on health statistics in relation to maternal health and prenatal events. 12-16 September 1983.* Unpublished WHO document DES/ICD-10/83.10.
2. Erica Royston and Sue Armstrong, (Eds.) *Preventing Maternal Deaths*, Geneva: WHO, 1989. Chapter 1 of this volume also summarizes direct and indirect estimation techniques for maternal mortality.
3. World Health Organization, "Maternal Mortality Rates: A Tabulation of Available Information," Geneva, WHO, 1985. Unpublished WHO document FHE/85.2.
4. E.g., "Mothers Lives Matter: Maternal Health in the Community," *Population Reports*, Series L, Number 7, September 1988; and Ann Starrs, "Preventing the Tragedy of Maternal Deaths: A Report on the International Safe Motherhood Conference," Nairobi, Kenya, February 1987. (Cosponsored by the World Bank, World Health Organization, and UN Fund for Population Activities.)
5. Starrs, op. cit.

SOFTWARE

Target Earth Data is a budget-priced educational software package that displays copious data about 219 countries and other geopolitical entities.

The program is largely map-concentrated, and its opening screen is a world map. Selecting a continent via a mouse or keystroke brings up a new, continental map with all countries labeled. Selecting one of these brings up screens of textual national data.

That's the extent of the program. But the data themselves are extensive; besides a variety of demographic rates, they include such specialized data as hospital beds per 1,000 population, official language, religion, and number of newspapers. An unusual listing is a total for "Died in 20th century wars."

The data range from 1983 to 1988, and come from the $29.95 reference book *Target Earth*, from the same company. Print-screen is the only way to print out data, and the program presently cannot sort, average, or display the data in a table.

Target Earth Data is available for $29.95 from Global Mapping International, 1530 Elizabeth St., Pasadena, Calif. 91104; phone (818) 398-2420.

—*A.H.*

POPULATION UPDATE

Estimated United States Population:

As of January 1, 1990	250,122,000
As of January 1, 1989	247,617,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1054.

Estimated World Population:

As of May 1990	5,305,000,000
Annual growth	93,000,000

Extrapolated from the mid-1990 population on PRB's *1990 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: December 1989

	12 months ending with December					
	Number		Rate			
Item	1989	1988	1989	1988	1987	1986
Live births	4,021,000	3,913,000	16.2	15.9	15.7	15.5
Deaths	2,155,000	2,171,000	8.7	8.8	8.7	8.7
Natural increase	1,866,000	1,742,000	7.5	7.1	7.0	6.8
Marriages	2,404,000	2,389,000	9.7	9.7	9.9	10.0
Divorces	1,163,000	1,183,000	4.7	4.8	4.8	4.8
Infant deaths	38,900	38,700	9.7	9.9	10.0	10.4
Population base (in millions)	...	...	248.2	245.8	243.4	241.1

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. Monthly Vital Statistics Report (Vol. 38, No. 12) from the National Center for Health Statistics.

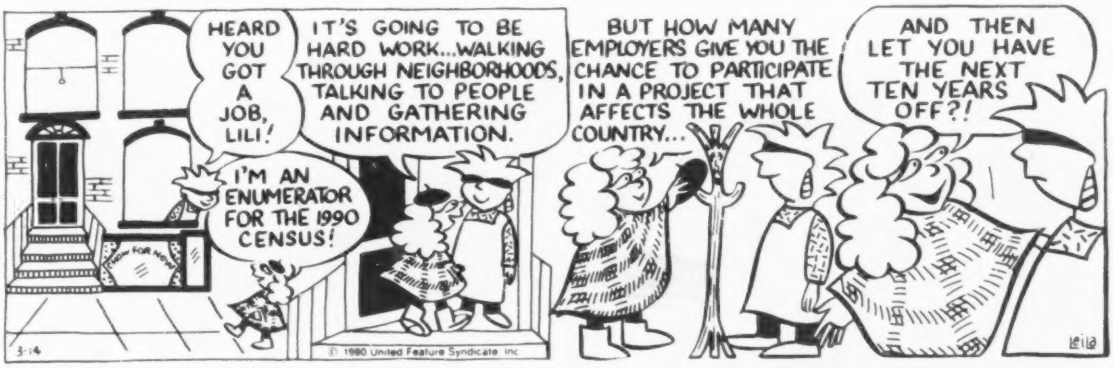
TAKE A NUMBER

The Absolute Numbers Behind the *1990 World Population Data Sheet*

Country or region (country's world pop. rank in parentheses)	Population mid-1990	Projected pop. change, 1990-2000	Annual births	Annual deaths	Natural increase	Annual infant deaths
WORLD	5,321,268,000	970,561,000	144,386,000	50,931,000	93,456,000	10,490,000
MORE DEVELOPED	1,214,110,000	59,965,000	17,932,000	11,368,000	6,564,000	286,000
LESS DEVELOPED	4,107,158,000	910,596,000	126,454,000	39,562,000	86,892,000	10,204,000
LESS DEVEL. (Excl. China)	2,987,281,000	750,473,000	103,127,000	32,227,000	70,900,000	9,343,000
AFRICA	660,960,000	223,265,000	29,185,000	9,712,000	19,472,000	3,173,000
Northern Africa	143,635,000	38,924,000	5,502,000	1,444,000	4,058,000	481,000
Western Africa	205,648,000	73,607,000	9,668,000	3,513,000	6,154,000	1,147,000
Nigeria (8)	118,819,000	41,932,000	5,489,000	1,996,000	3,493,000	664,000
Eastern Africa	198,880,000	73,875,000	9,333,000	3,302,000	6,031,000	1,084,000
Middle Africa	68,016,000	23,063,000	3,084,000	1,063,000	2,021,000	363,000
Southern Africa	44,781,000	13,796,000	1,597,000	389,000	1,208,000	98,000
ASIA	3,116,386,000	601,446,000	85,664,000	27,285,000	58,378,000	6,340,000
Asia (Excl. China)	1,996,509,000	441,323,000	62,337,000	19,950,000	42,386,000	5,479,000
Western Asia	132,384,000	42,480,000	4,813,000	1,059,000	3,755,000	340,000
Southern Asia	1,192,439,000	292,969,000	41,298,000	13,728,000	27,570,000	4,158,000
Bangladesh (9)	[illegible]14,783,000	31,820,000	4,499,000	1,653,000	2,847,000	540,000
India (2)	853,373,000	189,157,000	27,308,000	9,216,000	18,092,000	2,594,000
Pakistan (10)	114,649,000	34,498,000	4,999,000	1,525,000	3,474,000	552,000
Southeast Asia	455,297,000	92,164,000	13,193,000	3,848,000	9,345,000	925,000
Indonesia (5)	189,399,000	34,421,000	5,038,000	1,610,000	3,428,000	450,000
East Asia	1,336,266,000	173,833,000	26,359,000	8,651,000	17,708,000	916,000
China (1)	1,119,877,000	160,123,000	23,327,000	7,335,000	15,992,000	861,000
Japan (7)	123,638,000	3,861,000	1,286,000	797,000	488,000	6,000
NORTH AMERICA	278,078,000	19,617,000	4,457,000	2,379,000	2,078,000	42,000
United States (4)	251,398,000	16,868,000	4,073,000	2,187,000	1,885,000	40,000
LATIN AMERICA	447,063,000	88,113,000	12,662,000	3,300,000	9,361,000	687,000
Central America	117,770,000	26,730,000	3,726,000	754,000	2,972,000	191,000
Caribbean	33,510,000	4,683,000	845,000	267,000	578,000	48,000
Tropical South America	247,280,000	50,672,000	7,053,000	1,899,000	5,154,000	419,000
Brazil (6)	150,368,000	29,119,000	4,105,000	1,188,000	2,917,000	259,000
Temperate South America	48,503,000	6,028,000	1,038,000	381,000	658,000	29,000
EUROPE	501,077,000	13,574,000	6,409,000	5,102,000	1,307,000	75,000
Northern Europe	84,355,000	2,091,000	1,153,000	948,000	205,000	10,000
Western Europe	159,134,000	4,638,000	1,956,000	1,618,000	338,000	15,000
Eastern Europe	112,543,000	2,311,000	1,620,000	1,257,000	363,000	27,000
Southern Europe	145,045,000	4,534,000	1,681,000	1,279,000	402,000	24,000
USSR (3)	290,938,000	20,699,000	5,470,000	2,938,000	2,531,000	160,000
OCEANIA	26,766,000	3,847,000	540,000	212,000	327,000	14,000

ADDENDA

"Miss Featherbee," by Leila Cabib


HEARD YOU GOT A JOB, LILI!
I'M AN ENUMERATOR FOR THE 1990 CENSUS!
IT'S GOING TO BE HARD WORK...WALKING THROUGH NEIGHBORHOODS, TALKING TO PEOPLE AND GATHERING INFORMATION.
BUT HOW MANY EMPLOYERS GIVE YOU THE CHANCE TO PARTICIPATE IN A PROJECT THAT AFFECTS THE WHOLE COUNTRY...
AND THEN LET YOU HAVE THE NEXT TEN YEARS OFF?!
NOW FOR NO
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CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

THE PEOPLING OF HAWAI'I, by Eleanor C. Nordyke. (2nd ed.) Honolulu: University of Hawaii Press, 1989. 329 pages. $16.95 hardback. ISBN 0-82481191-7.

Much has happened in Hawaii, and to it, since the 1977 appearance of the first edition of this readable and authoritative volume.

Few places on earth offer a more pleasant climate or beautiful ocean setting than Hawaii. Little wonder that everybody wants a piece of it. For more than a century the state has been a litmus test of world wealth and power, from the estates of mercantile missionaries and their descendants, to Pearl Harbor and America's Pacific bastion, to oceanfront villas of oil-rich Saudis, and the hotels and shopping centers most recently acquired by Japanese businessmen. The effects of rapid population growth on the island environment are becoming more evident all the time.

Nordyke speaks with concern about the impact of continued population growth on Honolulu, the island community, and the environment. Her concern gives passion to the demographic analysis. Nordyke, who grew up in Hawaii and has spent the last 20 years on the staff of the East-West Population Institute there, writes with authority about the trends that have shaped today's island population, from the early Polynesian settlers to the present melange of American sun-seekers, Asian immigrants, and other groups. Her treatment of Hawaii's current demographic situation is thorough and interesting. The book contains useful tables and figures on the state's demographic characteristics.

The world—itself a global island—has a lot to learn from Hawaii's population dynamics. The second edition of Nordyke's careful analysis of the topic is a good place to begin the lesson.

—Bryant Robey

ENVISIONING A SUSTAINABLE SOCIETY: Learning Our Way Out, by Lester W. Milbrath. Albany: State University of New York Press, 1989. 403 pages. $57.50 hardback; $19.50 paperback. ISBN 0-7914-0162-6; ISBN 0-7914-0163-4.

A new sense of urgency has emerged in recent years over the need for environmental awareness and the necessity of keeping the world environmentally sustainable.

But the shape of such a society, and the most productive agenda for building it, have often seemed less clear. In this manifesto for change, Milbrath endeavors to solve both predicaments. He sees present society as a "dominant social paradigm," bent on growth and dominance over nature, whose sense of compassion is closely restricted to those "near and dear"—a category that excludes not only a large portion of the present population on earth, but also future generations. (He touches on world population growth, which he considers too high. "If we do not learn how to plan for and voluntarily limit human population in the next fifty years," he writes, "nature's own limits will force decline through human deaths.")

To replace this strategy, which ultimately becomes destructive of both the environment and world society, Milbrath proposes a "new environmental paradigm," based on limits to growth, heavy doses of cooperation, and preservation of a viable ecosystem that will provide for us and all other species.

How to get there from here? Milbrath is not optimistic about the prospects for a sudden societal conversion to progressive change, and warns that eventually, disruptive and recurrent portents will inevitably arise from nature. But he hypothesizes that times of turbulence can sometimes lead people "to perceive a new pattern of meaning" in life. Changing our ways will not be simple, but a society that changes easily is likely to be more sustainable than a society that resists change.

—Megan Polzer

Books Received

CROSSROADS: Environmental Priorities for the Future, by Peter Borrelli. Covelo, Calif.: Island Press (P.O. Box 7, Covelo, Calif. 95428), 1988. ISBN 0-933280-68-8.

POPULATION GROWTH AND POVERTY IN RURAL SOUTH ASIA, by Gerry Rodgers. Newbury Park, Calif.: Sage Publications, 1989. ISBN 0-8039-9600-4.

POPULATION PRESSURE, THE ENVIRONMENT, AND AGRICULTURAL INTENSIFICATION, by Uma Lele, and Steven W. Stone. Washington, D.C.: World Bank, 1989. ISBN 0-8213-1320-7.

PREGNANCY, CONTRACEPTION, AND FAMILY PLANNING, by E. Jones, J.D. Forrest, S. Henshaw, and J. Silverman. New Haven, Conn.: Yale University Press, 1989. ISBN 0-300-04474-7.

REGIONAL PATTERNS OF MIGRATION IN NEPAL, by Harka Gurung. Honolulu, Hawaii: East-West Center, 1989. ISBN 0-86638-118-X.

SURVLE ET SANTE DE L'ENFANT EN HAITI, by Michel Cayemittes and Anduch Chanazarian. Port-au-Prince, Haiti: Institut Haitien de L'Enfance, 1989.

WAR ON WASTE: Can America Win Its Battle with Garbage? by Louis Blumbers and Robert Gottlieb. Covelo, Calif.: Island Press, 1989. ISBN 0-9332280-92-0.

ICELAND

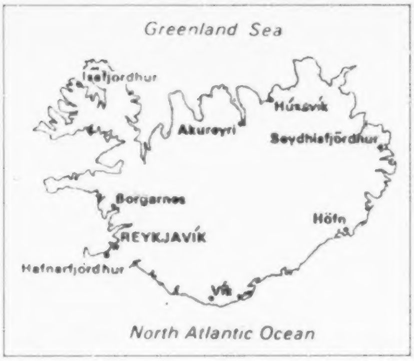
Population (mid-1990 est.): 260,000
Land area: 39,770 sq. miles
Population density: 6.5 per sq. mile
Births per 1,000 pop.: 19
Deaths per 1,000 pop.: 7
Rate of natural increase: 1.2 percent
Total fertility rate: 2.3 children per woman
Infant mortality rate: 6.2 deaths per 1,000 live births
Life expectancy: 78 years
GNP per capita (1988 est.): $20,160
Capital: Reykjavik

by Alex de Sherbinin

With a population the size of the Montgomery, Ala. metro area and a land area smaller than Kentucky, Iceland is one of the smaller entities on the world population scene. It may well be the only country in the world whose phone books list individuals alphabetically by *first* name. Yet its strategic ocean location and independent-minded people make a significant impact on world affairs.

Still, Iceland would be little more than an oversized iceberg were it not for the moderating effect of the Gulf Stream currents. Temperatures in Reykjavik vary from an average winter low of 31°F to a summer high of 52°F. This compares favorably with a low of −11°F and a high of 60°F for Fairbanks, Alaska, which lies in the same latitudes as Iceland, just under the Arctic Circle.

Iceland was a Danish colony from the 14th century until the First World War. It obtained a measure of independence after 1918, finally gaining full independence following World War II. The war was instrumental in creating links with the world political economy: afterward, the country became a stopover for many transatlantic flights, and Icelanders voted by a narrow margin to join the NATO alliance and accept the presence of U.S. military installations and troops. Today, some 5,000 U.S. troops and their dependents are stationed outside of Reykjavik—a sizable foreign enclave considering that the Americans constitute one in 25 of the metro area's population.



Most of the population is distributed on the island's southern flanks, with 55 percent residing in the capital itself. Unusual for a European country, fertility is higher than replacement level, which may reflect progressive Icelandic policies regarding parental leave (six months maternal and one month paternal) along with family benefit packages. The government shows little concern about population growth being too high; the country has one of the world's lowest population densities, and the economy, while subject to periodic recessions, is usually robust.

Icelanders' longevity, at an average of 78 years, is second only to that of the Japanese. There is no immediate concern about this aging population's effect on the economy, particularly since the moderately high birth rates are creating a continually growing pool of economically active adults. But it is likely that Iceland's free and universal health-care system could be strained with any increase in the absolute numbers of elderly.

Women's rights are high on the agenda of Iceland's president, Vigdis Finnbogadottir. In 1985 she participated in a day-long women's strike which was called to emphasize the important role of women in Iceland's economy and to highlight wage disparities between the sexes. Instruction on equal rights is built into school curricula.

Because of its reliance on exports of primary commodities, principally fish, Iceland has been described as a developed country with the economy of a developing country. (One product, surprisingly, is bananas, grown in some of the country's 40 acres of geothermally heated greenhouses.) Nonetheless, a modern manufacturing sector is in place, and Iceland maintains prosperity despite its chronic vulnerability to shifts in commodity prices and currency rates of exchange. Although not a member of the European Economic Community, Iceland's longstanding links with Europe allow easy access to markets, an access that it hopes to maintain beyond 1992 when European economic union commences.

POPULATION TODAY

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FEATURES

3 **PAA congregates in Canada**
At their annual meeting, 1,100 demographers recount their research, network to the max, and enjoy the charms of Toronto

4 **Millions of 1990 Census forms are still out**
Perplexed by a less-than-expected return rate, the Census Bureau will spend spring and summer tracking down reluctant respondents

5 **Low fertility, infant mortality rates in Trinidad and Tobago**
This Caribbean nation has a long tradition of family planning services, as well as universal prenatal care and medical assistance at delivery

5 **How are America's 64 million children doing in an age of change?**
They have fewer siblings and are more likely to live in a single-parent household, but many aspects of their lives remain unaltered

12 **Swaziland grows at 3.1 percent annually**
Absorbing past population increase into the labor force is becoming more difficult in this small Southern Africa country

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12 **Spotlight (Swaziland)**

Art Haupt

Toronto beckons demographers. (See page 3.)

PRB A publication of the Population Reference Bureau, Inc.

FROM THE EDITOR'S DESK

As the saga of the 1990 Census continues (see next page), some pundits have called for the data goals of the decennial census somehow to be accomplished by other, cheaper means.

Surveys, statistical adjustment, estimates, wholesale imputation, and privatization have been suggested as alternatives. And yet—were the census to be conducted solely as a mechanism for apportionment, you'd still need a 100-percent national head count, complete with giant address lists and enumerator armies.

This is true not only because the Constitution mandates a head count (not a survey), but to comply with the historic one-person, one-vote Supreme Court decisions pertaining to state legislatures, and also with civil rights law affecting apportionment of the House of Representatives. Compliance requires accurate data by race, ethnicity, and voting age, right down to the block level.

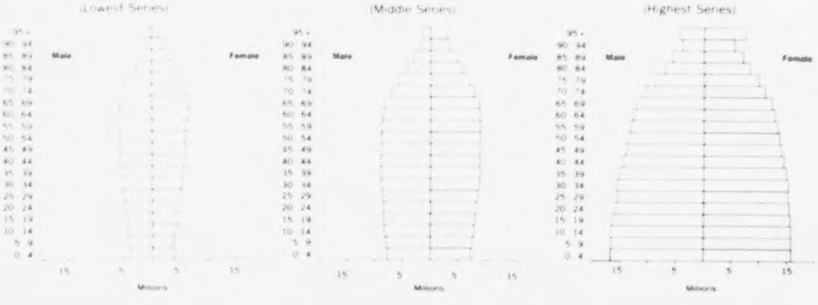
Why would you need data from tiny little blocks to apportion a great state? Well, suppose you wanted to divide a state of exactly 1 million people into two geographic halves with equal populations. To split that state so there are 500,000 people on either side of a dividing line necessitates *very* good population data broken down by *very* small areas. And the only way to obtain data of that quality is via a complete census. Accept no substitutes.

PRB demographer William O'Hare points out that reapportioning Congress requires even more exact geographic data than does state redistricting. The populations of congressional districts within the same state are supposed to be as nearly equal as possible. Even a 0.7-percent differential between districts was ruled excessive in a 1983 Supreme Court decision regarding New Jersey.

—Art Haupt

SPEAKING GRAPHICALLY

Assumptions Have Consequences



Above are population profiles of three Census Bureau projections of U.S. population in 2080. The lowest projection (185 million) presupposes a total fertility rate (TFR) of 1.5 and an annual net immigration of 300,000. The middle one (292 million) assumes 1.8 lifetime children and a net immigration of 500,000. The highest projection (501 million) presupposes a TFR of 2.2 and 800,000 annual net immigration. Life expectancy also varies—from about 78 years in the lowest to 88 in the highest. Even slight changes in assumptions can have large consequences 90 years down the road.

Source: U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1018.

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Other organizations	200	250

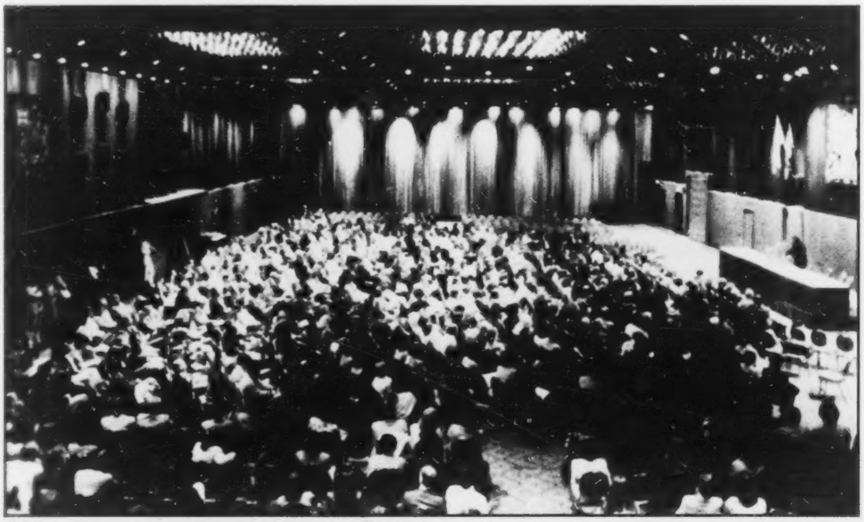
*Educators and students should send supporting documentation.

Recycled Paper

PAA Trots Northword to Toronto

Over 1,100 PAAers temporarily migrated (or in-migrated) to Toronto for the annual meeting of the Population Association of America.

During May 3-5, on the shores of Lake Ontario, in the shadow of the CN Tower (1,821 feet tall), they gathered—to hear papers, chat in the corridors, do serious networking, and generally catch up on the state of Population—'90s Style.



PAAers hear Larry Bumpass's presidential address.

Sessions

U.S. Trends. A picture of growing individualism in the U.S. emerged from several papers presented in Arland Thornton's session on changing attitudes and norms affecting the family. Margaret Mooney Maroni (Univ. of Minnesota) found that the current emphasis on the autonomy and freedom of the individual is associated with withdrawal of allegiance from social groups and institutions, producing an increase in social tolerance but a decrease in social responsibility.

Eileen Crimmins (Univ. of Southern California) presented a paper, coauthored with Yasuhiko Saito and Richard Easterlin (also USC), with a similar theme, comparing the attitudes of U.S. high school seniors in 1976 and 1986. While seniors wanted slightly fewer children in 1986 (2.37 vs. 2.63), the desire to give children greater opportunities than they had, and to be good parents, increased.

These future parents are not concerned with giving their children more of their time, however, but more goods. Compared to 1976, high school seniors in 1986 were much more concerned with obtaining lots of money, material goods, and recreation time. Ethical or value-laden issues such as "finding purpose and meaning in life, or working to correct social injustices have lost some of their relevance to students over the past decade." Discussant Ron Lesthaeghe (Vrije Univ., Brussels) commented that this trend toward individualism and secularism was pervasive throughout modern society—in Europe as well as the United States.

David C. Rowe (Univ. of Arizona) and David F. Harris (Univ. of North Carolina) found that younger siblings are consistently more sexually active than older siblings, in both the white and black population, but not in the Hispanic. The study indicated that earlier physical maturation is one of the more strongly supported hypotheses to explain this finding.

Irv Garfinkel (Univ. of Wisconsin-Madison) thought that over the long term, the 1988 Family Support Act might help raise the income levels of families with children, but that immediate short-term gains were unlikely. Frank F. Furstenberg, Jr. (Univ. of Pennsylvania) argued that it is unlikely that the Act will substantially increase contact between fathers and their children, and Kristin Moore presented data from the National Longitudinal Survey of Youth showing that the legislation's aim to put AFDC mothers to work would face some stiff obstacles.

The AFDC population (as compared to other groups of women—those who were poor, but not on AFDC; mothers who were not poor; and nonmothers) tended to have lower educational levels, fewer skills, less work experience, low self-esteem, and more traditional views of female roles (i.e., to stay at home and take care of kids), Furstenberg said. In sum, the Family Support Act should not be expected to save the nation's children from poverty or to recreate the happy American home.

Elaine Fielding (Univ. of Wisconsin) announced the results of a project which used 1980-1986 CPS studies and the 1985 American Housing Survey. The purpose was to analyze extent of black suburbanization in metro areas. Her results showed some evidence of racial convergence, despite a decline in black suburbanization during the 1980s. Also, national summary figures masked area-specific differences in city/suburb racial dissimilarity. Fielding gave Detroit, Los Angeles, and Washington, D.C. as examples.

James Fawcett (East-West Population Institute) et al. compared the skill levels and economic contributions of migrants admitted to the U.S. under two different preference systems: family and occupational. The implicit assumption of the two categories is that the former group is admitted for humanitarian reasons, while the latter is admitted for its potential economic contributions.

Excluding elderly parents and children of migrants, Fawcett found that the human resources and economic contribution indices (derived from an Immigrant Predeparture Assessment Survey) for those admitted in the

Continued on page 6

Complete and Return Those Forms!

As if lawsuits and undercount adjustment weren't problems enough, the 1990 Census has a new one—the return rate.

Mail returns are down compared to previous censuses. As of April 23, 65 percent of forms mailed out had been returned, including late mail returns, according to the Census Bureau. This was 5 percentage points lower than the 70 percent originally hoped for.

By comparison, the 1980 Census had reached 75 percent, including late mail returns, as of April 16, 1980. The 1970 Census, the first full mail-in census, had a 78 percent return.

Although the census operation is alive and well, the news about the return rate was dismaying. Newspapers editorialized in terms of "the partial breakdown of the census" *(Washington Post)*. And on April 27, President Bush made a special appeal "to urge every American who has not returned the census to do so, to stand up and be counted."

The good news is, low return rate or no low return rate, the Census Bureau is going to get its data. The heart of a decennial census is the comprehensive address rolls that pinpoint the country's 100 million or so dwelling units. Until a unit is checked off, it remains on the Bureau's to-do list, and enumerators will visit the unit three times, if necessary, to find the dwellers or at least to ascertain if they exist. Enumerators started conducting door-to-door followups on April 26.

The bad news is that each percentage point under the expected 70 percent will cost $10 million. And meanwhile, Bureau specialists and other population watchers are scratching their heads and wondering what happened.

Despite well-publicized omissions—a California town that didn't receive forms, for example—the shortfall does not seem to be the Postal Service's fault. Delivery problems are estimated to account for no more than 3 million of the nonresponses.

Is the address list too *good*—incorporating every possible dwelling unit including vacant ones? This could conceivably result in an inflated denominator from which the return rate is calculated; the vacancy rate around the country is estimated to be about 8 percent.

The most remarkable datum is that the nonresponse is reported to be even across the country: Urban is the same as rural, and there are essentially no differences between racial and socioeconomic groups, though black and Hispanic neighborhoods were estimated to have higher response rates than white neighborhoods.

So what happened? Until further data are available, speculation reigns. Some questions currently without answers:

- Did publicity about the census peak too soon? The greatest news coverage occurred during the March 20-21 homeless count, an operation that clearly fascinated the media. Census Day, April 1, 10 days later—the climax of a decade's preparation—received far less publicity.

65 percent
of census forms
have been
tallied

- Did people give up on their forms because advertisements made April 1 sound like the final deadline for mail back, instead of what it is, the starting gun?
- It's hard to quantify, but are people generally more strung out than they were in 1980?—in terms of being besieged by junk mail (which they may have mistaken the census packet for) and general lack of time?
- Has resentment against government intrusion increased? Is census nonresponse an expression of this resentment?
- Is the questionnaire itself (the same format as 1980) confusing or uninviting? The Census Bureau was locked into this format, which is designed to be readable by the FOSDIC scanning machines. But 1990 is the last time around for FOSDIC, which will be replaced by more sophisticated equipment, and the forms in the 2000 Census should have a more inviting appearance.

Without question, the census process has become a remarkable font of controversy and news stories. Lawsuits from jurisdictions claiming they were undercounted in 1980 have dragged through the courts year after year. There was the 1988 battle between the Census Bureau and the Office of Management and Budget over the content and number of questions for 1990; then the turmoil over adjusting the numbers for undercount (far from over); then controversy over whether and how to count the homeless. And the start-up of a new decade's worth of lawsuits.

Now, post-Census Day 1990, the Bureau must now puzzle over the case of the curious nonresponse. It will probably surmount the present brouhaha, as it has others. But the historical trend suggests that the decennial census, once a relatively low-key operation, is growing, not only in importance, but in the level of dissension and disagreement it engenders.

How to improve the response rate? Counsel from all quarters has not been lacking. One suggestion is for a no-frills national head count coupled with a major survey. Another proposal is to mail out the census questionnaire as part of a U.S. Government sweepstakes with multimillion-dollar prizes—after all, if states have lotteries, can the Feds be far behind? "There's only one person qualified to manage such an undertaking," said a letter to the editor. "Ed McMahon."

If all this weren't enough, a small number of imposters falsely representing themselves as census enumerators have popped up in various states. And ultimately, 1990 may be remembered as the census when an enumerator was bitten by a respondent (in Alton, Ill.). It's been that kind of year.

—*A.H.*

The State of U.S. Children

During the transformations experienced in the U.S. in recent decades, no age group has been subject to more social and demographic changes than have the nation's 64 million children (those under 18 years).

How are they doing? PRB's latest *Bulletin*, "America's Children: Mixed Prospects," assesses the well-being of the present generation.

Today's children have fewer siblings than their forebears. They are more likely to live in a one-parent household, and their mothers are about as likely to work as stay home. These children's socioeconomic status has become more varied (relatively poor and rich), and overall they are more likely than adults to be living in an impoverished household.

Although there has been a transformation in many aspects of family life over the past generation, popular perception may have exaggerated the extent of social change. True, parental care has become less of an option today for many families because the mother works. But as of 1988, some 70-75 percent of preschool-age children were cared for primarily by their mother, father, or other relatives (rather than by child-care services).

Similarly, the phenomenon of latchkey children may be less widespread than generally supposed. The *Bulletin* reports a 1984 Census Bureau survey found some half-million children aged 5-14 years had to fend for themselves after school, a lower figure than expected.

For these and other socioeconomic trends, the *Bulletin* provides national statistics and estimates on issues that are usually the object of much interest and speculation.

—A.H.

Copies of the 44-page *Population Bulletin*, "America's Children: Mixed Prospects," by Suzanne M. Bianchi (Vol. 45, No. 1, May 1990), can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling (800) 877-9881. Visa and MasterCard accepted. Prices for the *Bulletin* are: $7.00 a single copy; 2-10 copies, $6.50 ea.; 11-50 copies, $5.50 ea.; 51 or more, $4.00 ea. Orders of $50.00 or less must be prepaid and include $1.00 or 3 percent of total order (whichever is greater) for postage and handling.

SURVEY REPORT

Trinidad and Tobago

The Trinidad and Tobago Demographic and Health Survey (TTDHS), conducted in 1987, represents the only survey of a Caribbean country included in Phase I of the Demographic and Health Program. Results of the survey show some of the changes in the health and fertility of the population which have occurred in the two-island nation since the World Fertility Survey (WFS) in 1977.

The total fertility rate (TFR) has declined slightly, from 3.3 lifetime children per woman in 1977 to 3.1 in 1987. Among women who are near the end of their childbearing years (age 40-49), the average number of children is 4.3, and thus is another indicator of a decline in fertility. The TFR varies according to ethnic group; at current rates women of African descent will have 3.4 children on average and East Indian women will have 2.7 children. (These two ethnic groups each make up about 40 percent of the islands' population of 1.2 million.)

A long history lies behind family planning in Trinidad and Tobago. The first clinic opened in 1956, and in 1961 the Family Planning Association of Trinidad and Tobago (FPATT) was founded. In 1967 the government began offering maternal and child health services in clinics throughout the country and formed a population council which advocated a reduction in the birth rate.

Thus, contraceptive prevalence reached fairly high levels over a decade ago, and has not changed much since then. Fifty-three percent of women in union were using contraception at the time of the survey, virtually the same proportion as found by the WFS in 1977 (52 percent). The pill and the condom are the most widely used methods (14 percent and 12 percent, respectively), followed by female sterilization (8 percent), vaginal methods (5 percent), and the IUD (4 percent). Traditional methods, such as rhythm and withdrawal, are used by 8 percent of women in union.

East Indian women are more likely to use family planning than are African women (56 percent versus 49 percent), and Hindus and Catholics are more likely than other women to use a method (57 percent and 54 percent, respectively).

Most women who depend on clinic-based methods receive services at government health centers, while supply-method users are most apt to rely on pharmacies. The FPATT supplies about 15 percent of all family planning clients.

According to the TTDHS, 33 percent of women in union are estimated to be at risk of an unintended pregnancy because they do not want to become pregnant, but are not using contraception; only 13 percent say they intend to use a method in the future. Among sexually active women at risk, 21 percent say they are not using a method because of health concerns.

The infant mortality rate has declined substantially since 1976, from 47 deaths of children under age 1 per 1,000 live births to 26 deaths. Childhood mortality has similarly declined, from 7 deaths of children age 1-4 per 1,000 live births to 3 deaths. Contributing to these declines in mortality is the fact that for virtually all of the births in the five years prior to the survey, mothers received prenatal care and almost all had medical assistance at delivery.

—B.S.

Fig. 2 Total Fertility Rates
and Contraceptive Prevalence

Toronto glimpses: an overhead projection, Friday night's Cornell table, a trio of demographers, Thomas Award winners Rebecca L.

PAA in Toronto

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family preferences category were roughly comparable to those admitted under occupational preferences. He concludes that families may in fact act as "gate keepers," encouraging only those with the necessary skills and adaptability to immigrate to the U.S.

Sherrie Kossoudji (Univ. of Michigan) described the "cat and mouse" pattern in the behavior of illegal immigrants apprehended by the U.S. Border Patrol. Those apprehended revealed an adjustment pattern in the number and length of their forays into the U.S. labor market. The patterns suggest that the much of the effort to apprehend illegal immigrants involves catching the same people over and over, and thus teaching them how to be more effective in avoiding apprehension the next time.

With women entering the U.S. labor force at record rates, many are wondering whether their longevity will be reduced. Ingrid Waldron (Univ. of Pennsylvania) examined this question using individual and ecological data and concluded that no such reduction is evident, nor are there harmful effects on the health of middle-aged or older working women. By contrast, Waldron said, occupational hazards to which men are exposed account for about 5 to 10 percent of the excess of male over female mortality.

The U.S. and Canada. Norman Ryder (Princeton Univ.) presented a historical analysis of U.S. and Canadian cohort fertility trends. Although Canadian fertility rates have typically been somewhat higher than those in the U.S., this pattern has now reversed. Both countries, however, display remarkably similar fertility trends. Until the mid-1960s, period fertility tended to be higher than cohort fertility; now the reverse pattern is in evidence. Delayed childbearing and fewer higher order births have largely been responsible for fertility declines since 1970.

Ryder argued that because of social, economic, and cultural changes, it is unlikely that either the U.S. or Canada will replicate its post-World War II baby boom. However, current levels of immigration in both countries are sufficiently high (indeed, remarkably on target) to make up for any gap in cohort replacement fertility and will enable both countries to achieve a stationary population by next century if current trends continue.

World Trends. Young Hee Yoon (Rand Corporation, Santa Monica, Calif.) examined the generalization that urbanization and industrialization have had a dampening effect on female labor force participation around the world. He found that the type of development strategy makes an important difference. Import-substituting strategies, which promote heavy industry that often erects barriers to employment of women, are associated with declining participation. However, export-oriented strategies, which emphasize lighter industry (consumer electronics, for example) do not have the same depressing effect on women's participation in the labor market.

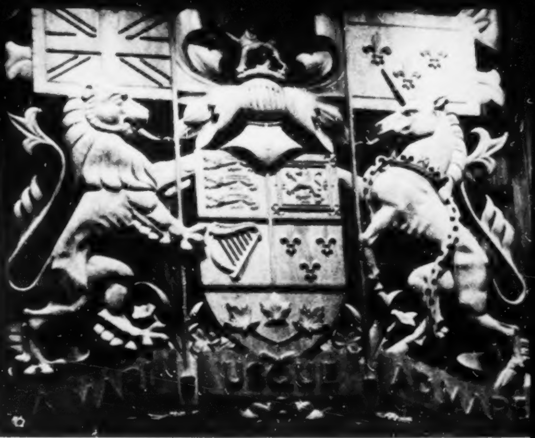
Frank Goza (Bowling Green Univ.) and Donald Sawyer (CEDEPLAR, Federal Univ. of Minas Gerais) reported that migration to the Brazilian agricultural frontier in the state of Rondonia has dropped off since the mid-1980s, when arrivals exceeded 10,000 per month. Once considered an agricultural "El Dorado" by impoverished peasants from more densely settled regions, Rondonia is now much less attractive. Many migrants have left the state or moved to its rapidly growing cities.

John Bongaarts (Population Council) outlined a new approach to measuring "wanted births" that overcomes some of the biases in existing measures derived from survey data on desired fertility. The new measure builds on the concept of a "wanted total fertility rate" (TFR) but adjusts it for "last-wanted births" that appeared to bias the earlier measure downward. More refined measures of this sort are proving helpful in making fertility survey information more useful to policymakers and program managers.

Charles Westoff (Princeton Univ.) in a paper on reproductive intentions and fertility rates reported on his analysis of data from 133 national surveys in which reproductive intentions (as indicated by the proportion of women who want no more children) were found to explain 76 percent of the variance in fertility rates. Westoff concluded that women's reproductive intentions, acting through the intervening variable of contraceptive prevalence rate, have considerable predictive validity.

In a session on findings from the demographic and health surveys, two papers examined the data from several countries to assess birth interval and breastfeeding trends. Reporting on determinants of birth intervals in Sub-Saharan Africa, Judith Seltzer, Richard Cornelius, and Ellen Starbird (USAID), concluded that breastfeeding is the main variable reducing the risk of short birth intervals in Africa.

James Vaupel and Zeng Yi (Humphrey Institute, Univ. of Minn.) offered projections on different ways China could meet its population goals. For


Clark and Jane E. Miller (shown with presenter Frank Bean), PAA President Larry Bumpass addressing PAA, Canada's Lion and Unicorn.

example, to have a target size population but slower growth in the proportion over age 65, China could adopt a two-child family policy with childbearing starting at age 30.

Addressing the inconsistency between TFRs and contraceptive prevalence, Donald Adamchak (Kansas State Univ.) and Michael Mbizvo (Univ. of Zimbabwe) compared Zimbabwe's high contraceptive prevalence rate of 43 percent in 1988 with its equally high TFR of 5.7 children per woman. Such high TFRs would normally be associated with a contraceptive prevalence rate of 23 percent. Their findings indicate that there is an extensive overlap between contraceptive use after last birth and postpartum amenorrhea, rendering a high percentage of contraceptive use redundant or ineffective.

Wolfgang Lutz (International Institute for Applied Systems Analysis) recounted the effects of public policy changes on fertility levels in East and West Germany. While policies directly aimed at achieving replacement level fertility are difficult to implement, there are many public policies that can have a strong, though indirect, effect on fertility levels.

For example, in 1972 East Germany passed a liberalized abortion policy and its TFR took a decided plunge. However, passage in 1976 of extended paid maternity leave, targeted particularly at working women with two or more children, pushed up fertility rates, particularly for higher order births.

Population projections for a united Germany were presented. If current East German fertility levels are assumed, then the total population size for a united Germany would be 69.2 million in 2030, compared to 78 million today. On the other hand, if West German fertility levels apply, total population will decline to 60.6 million by 2030. Because East Germany keeps more detailed demographic information than West Germany, demographers would hope that a united Germany will follow the East German statistical tradition.

AIDS. Frances Chevarley and Harry Rosenberg (National Center for Health Statistics) presented first results of 1987 deaths from HIV infection based on NCHS's new classification for AIDS that takes into account the disease's mortality impact regardless of immediate cause of death.

In 1987 there were 13,468 deaths from AIDS in the U.S. White males aged 25-44 accounted for the largest absolute number of deaths, while black males of the same age had the highest rates. AIDS was among the top five causes of death for both these groups. Hispanic AIDS mortality rates, based on data from those states where death records code Hispanic ethnicity, appear to fall between the white and black rates.

Barbara Boyle Torrey and Peter Way (Center for International Research, U.S. Bureau of the Census) reported on the available survey data covering HIV seroprevalence in Africa as of Winter 1990. According to the still-sketchy data sources, AIDS remains largely an urban disease, but the epidemic may be most severe in certain rural Central African regions. The age profile for HIV-1 and HIV-2 cases seems quite distinct. HIV-2, possibly due to a longer latency period, strikes a noticeably older population. HIV-2 seroprevalence has been associated with West Africa but new evidence suggests high rates in Mozambique as well.

The 1990 Census. Reynolds Farley (Univ. of Michigan) discussed his analysis of responses to an open-ended question on ancestry asked in the 1980 Census. He found ancestry reporting among blacks, Hispanics, and recent (first and second generation) immigrants to be consistent with responses given to Census items on race and Spanish origin. Many later generation European groups, however, were likely to report two or more ancestries, no ancestry, or an "American" ancestry. His evidence suggested ancestry as less salient for these third and higher generation whites than for racial groups and recent immigrants. Farley predicted no rise in the listing of "American" as an ancestry in the 1990 Census.

Charles Jones (U.S. Bureau of the Census) issued a "progress report" on the 1990 Census. He stressed many positive developments with the Census despite its problems (such as the low response to mail questionnaires and the necessity of hiring more enumerators which resulted). As examples of such happenings, he included administrative actions to attract qualified enumerators; the increased accuracy of mailing lists; the use of computerized TIGER maps; and the success of "Shelter and Street Night" in March. Jones predicted that the 1990 Census ultimately will be successful. When asked about the low response rate and its implications, he stated his belief that the low rate was due more to apathy than to anger with the government.

Business and Applied Demography. As Laurence Rosen (Michigan Dept. of Management and Budget) noted in his remarks at the session, the topic choice was

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influenced by nagging concerns regarding applied demographers' place in the PAA. Diverse opinions discussed by the panel—which included David Swanson (Pacific Lutheran Univ.), Julia Martin (Univ. of Virginia), Linda Gage (California Dept. of Finance), Mike Batutis (U.S. Bureau of the Census), and Hallie Kintner (General Motors Research Labs)—ranged from forming an Applied Demography group separate from the PAA to involving applied demographers more in PAA affairs.

Martin, in stating her preference for a separate Applied Demography group, noted that her duties have moved away from technical demography and into other concerns, including administration and dealings with the public, media, and politicians—concerns having no reference to the PAA. Kintner, on the other hand, listed three ways in which applied demographers can take a more active role in the PAA: improving communication with the PAA Board (such as making *Applied Demography* an official PAA publication); fostering the professional development of applied demographers; and actively promoting demography as a profession. These measures, she stated, would increase PAA's membership and prestige. The floor discussion continued along this theme and included talks on the unresolved issue of certification for demographers.

Three papers described the evolution and content of applied demography degree programs at Georgetown and Bowling Green Universities. The papers focused on the importance and difficulty of setting up effective internship programs to complement the academic side of the program and on dealing with the academic politics of starting a new program. Two more papers by former students now working in applied settings emphasized the importance of keeping things flexible for applied students and helping them to understand how to communicate with real-world clients. The discussant, Stephen Tordella (PRB's Decision Demographics), elaborated on key differences between the way reports should be presented for academic and nonacademic audiences.

Awards Night

Late Friday afternoon saw the presentation of the Dorothy S. Thomas Award, for the best graduate student papers on migration or economic-demographic-social interrelations. Awardees were Rebecca L. Clark (Urban Institute, Washington, D.C.), for her paper "Does Welfare Affect Migration?"; and Jane E. Miller (Office of Population Research, Princeton Univ.), for her paper "Birth Spacing and Perinatal Health: A Comparison of Three Hypotheses."

The Mindel C. Sheps Award, given every other year for outstanding contribution to mathematical demography or demographic methodology, was presented to Kent Manton (Duke Univ.).

After the awards, Ronald Freedman (Univ. of Michigan), who presided over the evening's festivities, introduced PAA President Larry L. Bumpass (Univ. of Wisconsin-Madison), who addressed the packed ballroom on "What's Happening to the Family? Interactions Between Demographic and Institutional Change."

> Divorce rates have changed accepted ideas of family life

Bumpass examined the state of the U.S. family, expanding upon themes of the past few PAA presidential addresses. The modern family, Bumpass reminded his audience, is the result of centuries-old trends, and both pro- and antinatalist forces.

High divorce rates have fundamentally changed family life in America, said Bumpass. As many as 60 percent of today's newlyweds may divorce. This reality has robbed marriage of its aura of permanence: encouraging more young women to plan careers; relaxing the stigma of out-of-wedlock births and cohabitation; and holding down birth rates. This lack of confidence in marriage may be self-fulfilling: If marriage is perceived as a shaky institution, couples may be less willing to fully commit themselves to it.

Changes in attitudes about the family, Bumpass asserted, often lag behind changes in actual social behavior. As one prime example: Between the 1960s and 1980s, a dramatic increase in employment of mothers with young children occurred despite a strong, and pervasive, common belief that preschool children were harmed by having their mothers work outside the home. Yet research (by Saito, Crimmons, and Esterlin; see page 4) has also suggested that the new generation of parents would rather give their children material goods than parental time.

Given all this, can the family survive? Bumpass's presidential address dismisses the question. The real enigma, he said, concerns what the family will be like in the future. In the meantime, society's task is to try to ameliorate the negative effects of current trends on families rather than attempt to reverse the tide of change itself.

PAA Sidebars

Oversized, elegant, mysterious, the Royal York was like a cheerful version of the luxury resort hotel in the supernatural movie *The Shining*. The elevators' destination buttons had a particularly steep learning curve: A, M, MM, C, CM, 1, 2, 3 . . . (where M signified the street-level floor).

That said, it should be added that the Royal York's rooms were exceptionally spacious and elegant. And the Friday night alumni party (the replacement for the now-squelched suite parties of the past) in the ballroom seemed quite festive this year.

Toronto also was refreshing. Canada's largest city (3.4 million population) seemed a happy community where a multi-ethnic citizenry lives harmoniously under clear skies, cheering at Blue Jays games when they're not riding on shiny red streetcars or strolling down sidewalks that have literally just been scrubbed down with soap—a novelty for those south of the border.

The Saturday of the annual Fun Run

dawned chilly and a bit damp, which might account for the low number of participants. There were only seven hardy souls at the starting line, with a sex ratio of 600.

This year's run was planned by ex-PAA President Farley, who had scouted the area and, in a spasm of creativity, mapped a route that included a 10-minute ferry ride to Toronto Island Park. The ferry (blessedly heated) took the runners to the peaceful paths of the placid park, and 30 minutes or so were spent jogging two or more miles along the main path of the island (which has no private cars). The view of the Toronto waterfront from the ferry, a rainbow arching over the city, swallows, doves, and other birds going about their morning business, the invigorating air, and the good company all combined to make the run one of the most enjoyable ever and certainly a high point of the 1990 meeting.

A brief compilation of PAA one-liners:

One unidentified demographer to another, aboard one of those elevators: "I have nightmares of someone, one hundred years from now, attempting to trace his family's genealogy only to find out that his great grandfather was imputed in the 1990 Census."

Discussant Randy Bulatao (World Bank): "Once more, demographic-transition theory has been subjected to the slings and arrows of outrageous regressions."

Ed Pryor (Statistics Canada): "George Washington wasn't happy about the 1790 Census total of 3.9 million. He thought it should be 4 million. I believe the case is still before the courts . . . ."

In every year following a U.S. decennial census, the PAA meets in Washington, D.C. Next year will be no exception.

—compiled by Cary Davis, Alex de Sherbinin, Carol de Vita, Judy Felt, Robert Gardner, Thomas Godfrey, Art Haupt, Mary M. Kent, Thomas W. Merrick, William O'Hare, Kelvin Pollard, Stephen Tordella, and Nancy Yinger

SOFTWARE

Future Population is a cohort-component population projection program that can import population data and then project the year-by-year demographic parameters and distribution as they change over time. It can output these projections by years of age or by five-year groupings, as well as corresponding basic age-sex pyramids.

Up to three population subgroups may be included in the data, and fertility, mortality, and migration rates can vary across different periods of the projection as the user determines.

The program is designed to accept ASCII data files created by the user. It also comes with sample files for Iran in the 1950s and Egypt and the U.S. in the 1980s.

Future Population is available from National Collegiate Software of Duke University Press, 6697 College Station, Durham, N.C. 27708. Phone (919) 684-6837. Price: $25.00; site license and lab pack prices available on request. The Clearinghouse distributes various social-science and humanities-oriented PC software authored by university faculty across the country.

—A.H.

POPULATION UPDATE

Estimated United States Population:

As of March 1, 1990	250,474,000
As of March 1, 1989	247,935,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1056.

Estimated World Population:

As of June 1990	5,313,000,000
Annual growth	93,000,000

Extrapolated from the mid-1990 population on PRB's *1990 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: January 1990

	12 months ending with January					
	Number		Rate			
Item	1990	1989	1990	1989	1988	1987
Live births	4,040,000	3,919,000	16.3	15.9	15.7	15.5
Deaths	2,169,000	2,169,000	8.7	8.8	8.8	8.7
Natural increase	1,871,000	1,750,000	7.6	7.1	6.9	6.8
Marriages	2,409,000	2,386,000	9.7	9.7	9.9	9.9
Divorces	1,159,000	1,188,000	4.7	4.8	4.8	4.8
Infant deaths	39,000	38,600	9.7	9.9	10.0	10.4
Population base (in millions)	. . .	. . .	248.5	245.8	243.5	241.1

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.

Source. Monthly Vital Statistics Report (Vol. 39, No. 1) from the National Center for Health Statistics.

TAKE A NUMBER

U.S. Ethnic Numbers: For the first time ever, the Census Bureau has issued detailed postcensual race and ethnic estimates for the United States. The *Current Population Reports* edition entitled "United States Population Estimates by Age, Sex, Race, and Hispanic Origin: 1980 to 1988" tracks the growth of ethnic population since the 1980 Census by age and sex. Overall, those under 30 years continue to be a minority in the country. The median age has now risen to 32.3; this measure will continue to rise as the baby boomers progress up the age ladder. But the real news in this report is the ethnic information. Annual estimates of the larger groups such as whites, blacks, and Hispanics had been published on a regular basis, but the inclusion of "other races" now rounds out the picture. No longer must we rely on 1980 data for a full breakdown. The various groups, along with the changes since 1980 are shown at right.

July 1, 1988 Population: Incl. Armed Forces Overseas (in 1,000s)

Ethnicity	1988	1980	% change
White	207,748	195,571	6.2
Black	30,326	26,903	12.7
Asian/Pacific Islander	6,529	3,834	70.3
American Indian, Eskimo, or Aleut	1,699	1,429	18.9
Hispanic*	19,852	14,803	34.1

*Hispanics may be of any race

Among the groups, the Asian and Pacific Islander (API) population manifested the most spectacular growth, rising from 3.8 to 6.5 million in just eight years. Some of that growth was, however, fueled by refugee immigration in the early part of the decade. The growth rate for API's, in fact, dropped from 9.1 percent in 1980-1981 to 5.5 percent in 1987-1988.

What's Going On With U.S. Fertility?: Is the U.S. experiencing a real rise in its birth rate or is the present trend merely an aberration? The birth rate for January 1990 was 15.5 per 1,000 population compared to 14.8 for the same month in 1989. And as shown in "Population Update" on the preceding page the 12-month rate, ending in January 1990, was 16.3, noticeably higher than the 15.9 for January 1989. While we don't want to attach too much importance to short-term trends, the U.S. birth rate definitely bears watching . . . .

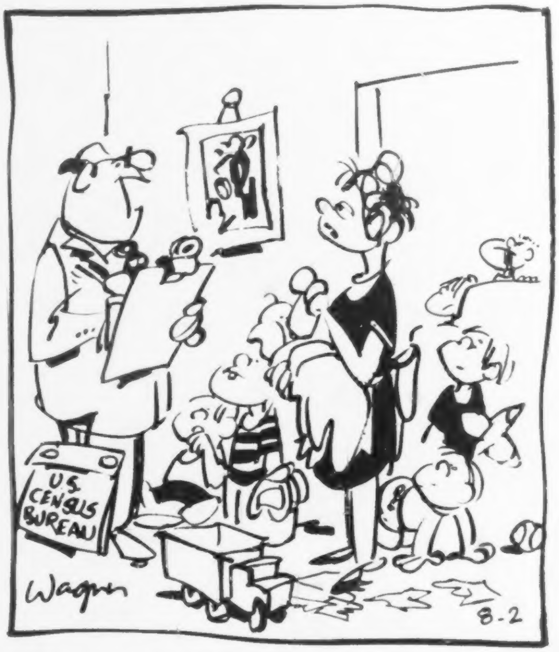
—C.H.

Clarification

Contrary to what the April 1990 *PT* reported in the article, "Israel New Home for Soviet Jews," Israel's occupied territories (mainly the West Bank and Gaza) were occupied in the 1967 (not the 1973) Middle Eastern war. Furthermore, East Jerusalem is not an occupied territory, since it was claimed by, and formally annexed into, Israel after that war.

ADDENDA

Grin and Bear It, by Wagner



"Well then, how about a rough estimate, madam?"

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CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

A HUMAN MOSAIC: An Atlas of Ethnicity in Los Angeles County, 1980-1986, by David M. Heer and Pini Herman. Panorama City, Calif.: Western Economic Research Co., 1990. 266 pages. $200.00.

This book provides statistical data for each of the 1,644 census tracts in Los Angeles County. For each census tract, slightly reconfigured 1980 Census data and 1986 estimates are provided for 20 different groups based on race/ethnicity and nation of birth. The 1986 estimates rely on birth and death records for each census tract. Results are presented in tables and displayed on a census tract map of Los Angeles County. Also, the book contains a convenient transparent overlay which shows the location of major municipalities within the county.

As the authors acknowledge, "Most demographers would have shied away from attempting to estimate postcensual populations of census tracts by detailed ethnicity." The reason for this, as the authors indicate, is the large errors typically associated with such estimates. Clearly, the estimates in this book will contain substantial errors. The question is whether the 1986 estimates provide a more accurate reflection of the tract characteristics than the 1980 data.

Some of the definitions used in this publication differ somewhat from conventional Census Bureau definitions. For example, the authors define anyone under age 15 as foreign born if that person's mother was foreign born.

Aside from the enormous amount of statistics contained in the book, perhaps the most striking feature of this publication is its $200 price tag.

Putting cost aside, I think this book might be of interest to three types of people. First, anyone interested in small-area data for Los Angeles County. Second, anyone who might be interested in producing similar books for other metro areas might find this to be a useful model. Third, those interested in small-area estimates might be interested in the methodological portions of this study.

—*William O'Hare*

YEAR BOOK OF LABOUR STATISTICS RETROSPECTIVE EDITION ON POPULATION CENSUSES, 1945-89, by the International Labor Office. Geneva, Switzerland: ILO, 1990. 1,059 pages. $119.00 hardbound. ISBN 92-2-006428-6

The International Labor Organization (ILO) introduces a special edition of the *Year Book of Labour Statistics.* This retrospective *Year Book* contains statistical information on the economically active population for 184 countries, areas, and territories. The data are compiled by sex and age group; by industry, employment status, and sex; and by industry, occupation, and sex. The statistics date back to 1945 and are derived from over 559 population censuses.

The International Labor Organization was formed in 1921 to collect information on the issues concerning the changing industrialization and labor patterns of the world. The *Year Book of Labour Statistics* evolved from a sparse collection of tables and text on cost of living, wages, and unemployment, into a full Appendix in 1933 and a separate volume in 1934. In 1935-36 the *Year Book of Labour Statistics* became an independent publication.

Since 1945, ILO has collected statistical information on labor from an ever-growing number of countries; population census data have always been a major component of the data presented. This publication will be invaluable to those studying trends in industrial development.

—*Kim Crews*

THE ORIGINS OF AUSTRALIA'S CAPITAL CITIES, edited by Pamela Statham. Sydney, Australia: Cambridge University Press, 1989. 364 pages. ISBN 0-521-36242-3.

The population distribution of Australia presents a unique case study in "city primacy" that is largely due to the way in which the country was settled. This engrossing history of the cities' development is filled with many details on their founding and emergence as the dominant settlements in their territories.

Australians like to characterize their country in terms of the outback or bush, but the land "down under" has been highly urbanized from the start. The capital cities were "instant cities," created for specific purposes and largely subsidized by direct funding from England. Their demographic dominance is evidenced by the almost complete lack of medium-sized urban places between the metropolitan capital and the smallest towns.

The growth of these cities was unlike that in other areas of the New World. They did not evolve as a result of a natural rural to urban migration process, but grew primarily by the immigration of those with urban backgrounds. Australia's cities not only developed ahead of the rural zones, but even before those areas were investigated. The result of this upside-down process defines the Australia of today.

—*Carl Haub*

SPOTLIGHT

SWAZILAND

Population (mid-1990 est.): 800,000
Land area: 6,704 sq. miles
Population density: 119 per sq. mile
Births per 1,000 pop.: 46
Deaths per 1,000 pop.: 15
Rate of natural increase: 3.1 percent
Total fertility rate: 6.2 children per woman
Infant mortality rate: 130 infant deaths per 1,000 live births
Life expectancy: 50 years
GNP per capita (1988 est.): $790
Capital: Mbabane

by Gwenda Brophy

Swaziland, one of the smallest countries in Africa, is a landlocked country bordering South Africa and Mozambique. Relatively ethnically homogenous, in the last decade it has experienced substantial immigration of Mozambican refugees. The population of around three-quarters of a million is mainly rural, with a quarter of the population living in urban areas.

The economy has a dualistic nature, a traditional, mainly subsistence farming sector, and a modern sector with large agro-industries—sugar, wood and pulp, fruit canning, mining for coal and asbestos, and a small but well-established tourist trade. There are close economic ties with South Africa—Swaziland is a member of the South African Customs Union which facilitates the free movement of goods between Swaziland and South Africa, Botswana, and Lesotho, and is also part of the Rand monetary area.

In terms of demographic indicators Swaziland experiences higher-than-average male mortality relative both to females and to children; it is believed that this may be related to the high number of males who work in mining and the associated hazards.

MOZAMBIQUE
Maputo
Mbabane
SWAZILAND
INDIAN OCEAN
SOUTH AFRICA

A census undertaken in 1986 and a Family Health Survey in 1988 reported a total fertility rate of 5 children per woman, although the Census Office believes this is an underestimate. Urban fertility is lower at 3.5, and rural 5.4. Childbearing takes place in a wide range of union types—marriage by civil ceremony or by Swazi custom, consensual and visiting arrangements; polygamous unions are also in evidence.

In 1973, family planning services were introduced through Ministry of Health facilities. While contraceptive prevalence was estimated in 1985 at only 4 percent, the 1988 survey found an overall prevalence level of 17 percent (28 percent in urban areas; 13 percent in rural areas). Female education level was the biggest determinant of contraceptive use—34 percent of the most highly educated women were users, compared to only 10 percent of women with no education. These groups make up around 10 percent and 20 percent of the female population, respectively.

Issues associated with population and family planning remain politically and culturally sensitive. The Family Life Association of Swaziland provides population information and education programs to parliamentarians and chiefs, covering major factors of population growth and development.

The population growth rate of 3.1 percent per year is among the highest in Sub-Saharan Africa. The economy, already finding difficulty in absorbing the growth in the labor force—a consequence of past high fertility—will face a dramatic increase in the supply of labor in the 1990s, and the formal sector will find it impossible to absorb more than a fraction of them.

Public education extolling the benefits of family planning has also been pursued with target groups such as clinic attendees, younger women, women's groups, and men. The men are commanding increasing attention for their role in reproductive behavior. Their traditional opposition to family planning is believed to inhibit many women adopting family planning, and to make many others "surreptitious" users.

The increasing spread of sexually transmitted diseases in the country is causing new concern. Employer-based distribution projects have been established which focus on the distribution of condoms, and knowledge of condoms is high (90 percent among urban men and 75 percent among rural men). The urgency of encouraging condom use may rise if the numbers of reported AIDS cases continue to grow as they have during the last few years.

Gwenda Brophy is currently a consultant at Southern African Demographic Research, Swaziland.

R8750-1

POPULATION TODAY

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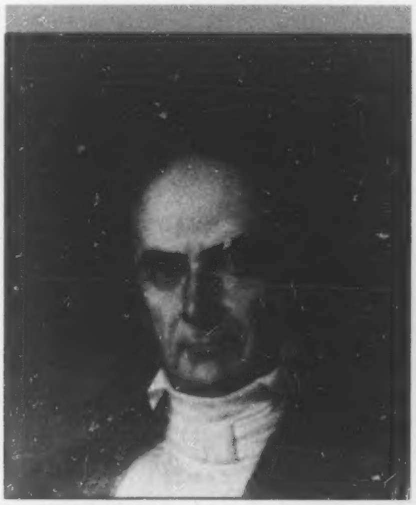

National Portrait Gallery

Daniel Webster's plan was one of many. (See page 6.)

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FROM THE EDITOR'S DESK

What do demographers take to the beach for light summertime reading?

Why, population-related fiction, of course. And while real-life population issues have been touched on by such popular writers as Kurt Vonnegut and Evelyn Waugh, most fiction about population is, frankly, gaudy Science Fiction.

Take, for example, *City.* This novel by Clifford Simak tells how a future "rural renaissance" not only makes U.S. cities obsolete but ends the threat of nuclear war–no more urban targets. (More amazing yet, the novel describes a 21st-century census enumerator going door to door–but then, *City* was published in 1952.)

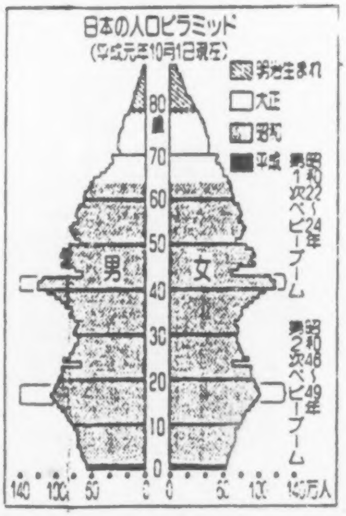
The Wanting Seed (1962) by Anthony Burgess, author of *A Clockwork Orange,* shows coercive family planning in an overcrowded world. *Make Room! Make Room!* (1966) by Harry Harrison (later the Charlton Heston movie, *Soylent Green*) describes how population pressures cause a modification (to put it mildly) in human diet. And in *The Space Merchants* (1953), C.M. Kornbluth and Frederik Pohl satirically depict a densely-populated future where every person and natural resource is commercially exploited to the max.

But the ultimate population parable is surely the futuristic short story "Build-Up" (1960) by J.G. Ballard *(Empire of the Sun).* Ballard's hero has always assumed that the ultra-congested megalopolis where he lives encompasses the entire earth. What he ultimately discovers is that this megalopolis now fills the entire *universe,* and every cubic light-year has gone condo–a grim, dystopian vision that makes even summer at the beach seem positively deserted.

–Art Haupt

SPEAKING GRAPHICALLY

Japan Worries About Fertility



In contrast to the fertility "rebound" experienced by some low-fertility countries (such as Sweden, West Germany, and the U.S.), in recent years Japan has experienced a steady decline in both fertility and annual births since 1973, the peak of its baby boom echo. In 1989, the population growth rate reached a postwar record low of 0.38 percent, while the just-reported 1989 total fertility rate of 1.57 lifetime children per woman is the lowest in history.

The Japanese government recently published a Health and Welfare White Paper entitled "Child, Family, and Community in the Longer Life Society," painting a negative picture of the social consequences of fewer children. Perceived problems include the "weak" social development of only children, work force shortages, and increasing pension and medical care burdens as the population that pays for these services–those in the working ages–begins to lag.

Analyzing the trend, the newspaper *Nikkei* attributed the recent fertility decline to a number of factors: a rise in age at first marriage (24.2 in 1972 to 25.8 in 1985) that has increased the proportion of unmarried women at their peak childbearing ages of 25-29 (from 20 percent in 1970 to 31 percent in 1985), as well as a growing number of two-worker families (one-fifth of couples with children under the age of 6) and generally expensive housing costs and population density. Among the proposed remedies: more support for child-care facilities, parental leave for child-care purposes, and programs to help working mothers re-enter the labor force.

–M.Y.

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Recycled Paper

Shifting from Pro-Growth to No Growth

As world population expansion continues apace, shifts have occurred in the attitudes and policies of many governments toward increase within their national borders.

Decades ago, many less developed countries (LDCs) favored population growth for various reasons, including the belief that such growth could be a stimulus, not an impediment, to economic development.

With time, however, official pro-growth stands in many LDCs have become more equivocal. Countries have acquired experience in the effects of population increase, and official uncertainty has mounted as to the potential ultimate effects if growth continues. (A quarter-century ago, when LDC growth rates were at their peak–about 2½ percent per year–there were less than two-thirds as many people on earth as there are today.)

To what extent have official attitudes changed? The United Nations Population Division tracks national population policies on a continuous basis; the Division's newest report, *Trends in Population Policy,* just published, finds that as of 1989, 40 percent of the 170 governments surveyed feel that their country's growth is too high, 45.3 percent feel that growth is "satisfactory," and the remainder, 14.7, find it too low. In the 15-year period from 1974 to 1989, the number of "too-low" countries has dropped from 39 to 25, while the "too highs" are up to 68, from 43. (The study followed 156 countries for the period 1974-1989, and 14 additional countries whose coverage started after 1976.)

Viewed in terms of population, the policy shift seems less dramatic. In 1974, the "too lows" constituted 11.7 percent of world population. By 1989 this percentage was down to 5.4 percent. These countries with "too-low" attitudes toward their growth tend to be less populous than the "too-high" countries.

The vast majority of the world's countries offer direct support to contraceptive access, and the report finds that 123 countries, containing 91.2 percent of the world's population, offer this support; these figures are up somewhat from 1974's already high proportion. Only seven countries, containing 1.3 percent of population, now limit access to contraception.

As nations' populations have grown, so has their interest in family planning.

During this period, government attitudes toward immigration have changed considerably. Whereas in 1974, only 10 countries had policies to lower the level of immigration, by 1989, this figure had risen to 54 countries, which contain one-fifth of the world's population. Although 61 percent of countries find their levels of immigration not to be significant, that figure marks a decrease from the 76 percent of 15 years earlier and may be a reflection of attitude rather than significant immigration shifts.

Similarly, concern about internal migration has dropped slightly. One hundred and sixteen countries have policies to decelerate or reverse their internal migration; this is down from 117 in 1974, but it's noteworthy that so many governments should be dissatisfied with their countries' internal migration trends.

Trends in Population Policy is available from the UN (Sales No. E.89.XIII.13). Also available are the first two volumes (of three) of *World Population Policies,* an encyclopedic country-by-country reference work that describes national population policies in more detail. (Sales Nos. E.87.XIII.4 and E.89.XIII.3, respectively.)

–*A.H.*

World Population Day

World Population Day is July 11.

Each year the United Nations Population Fund (UNFPA) commemorates this day to "heighten public awareness of population issues."

Population Day events this year are taking place in some 100 countries, and include radio and television coverage, seminars and workshops, school competitions, newspaper supplements, and exhibits. The UNFPA has also produced an educational videotape, *The Challenge Ahead,* which describes the social, economic, and environmental impact of an additional billion people every 12 years. The videotape is being distributed worldwide.

Why July 11? That date in 1987 was the putative day that the Earth reached 5 billion, by the UNFPA's calculations.

Boom and Bust Prompt U.S. Cities to Change

The city names may be the same, but much else has changed in the population dynamics of U.S. metro areas. In recent years, internal migration, shifting economic conditions, and new living patterns have caused urban boom and bust, as well as forced cities into new, unexpected economic and social roles.

What processes have been at work? And–looking ahead–what's in store for America's cities in the 1990s and beyond? In PRB's latest *Bulletin,* "Metropolitan America: Beyond the Transition," author William H. Frey examines the increasingly volatile dynamics of urban population change in the past two decades.

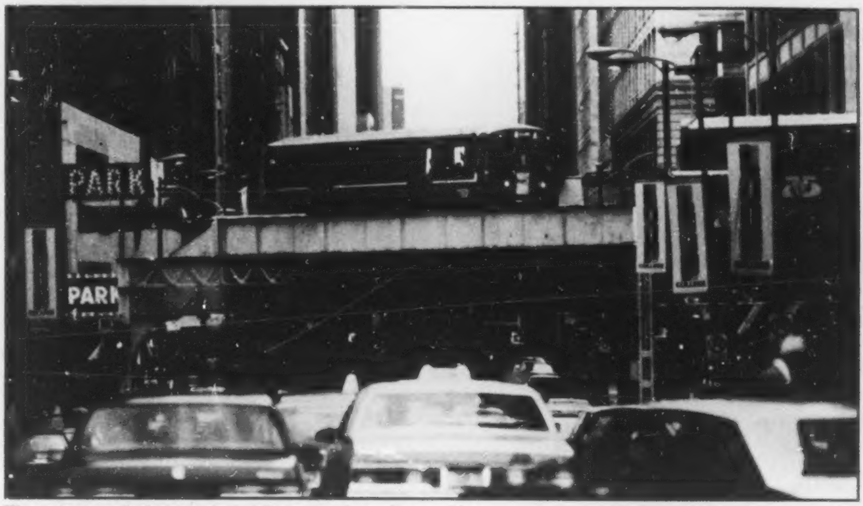
Through most of the 20th century, the national trend was toward population concentration in large cities, as rural Americans gravitated toward urban settings, drawn by nonagricultural jobs and expanding economies. Some 39.6 percent of the national population lived in urban areas in 1900; by 1980 the figure was 73.7 percent.

In the 1970s, that movement slowed, or even reversed, during a brief "rural renaissance," when a change in settlement patterns resulted in nonmetropolitan areas (then containing about 31 percent of the population) growing faster than metro areas.

Since the 1970s, population growth in the larger urban areas has revived somewhat, while the populations of smaller metro areas, some of which had been hard hit by economic decline, have stagnated. Some urban areas–particularly those in the South, the West, and along the Atlantic and Pacific coasts–have experienced new population booms, and a number of cities have adapted to new times by taking on new roles.

Among the new U.S. urban roles that Frey describes are:

- **World cities,** cities that are strong financial and trade players in the international economy (e.g., New York, Los Angeles).
- **National command and control centers,** new urban keystones of the domestic economy (e.g., Boston, Atlanta, and Minneapolis-St. Paul).
- **Specialized areas** that rely heavily on one or two economic sectors (e.g., Houston, San Diego).
- **Smokestack areas,** cities previously dominated by heavy industry, the economic decline of which has forced them to attempt diversification into service or high-tech fields.


Chicago Convention & Visitors Bureau

The stress of change has hit many American cities.

Frey, who is Research Scientist and Associate Director for Training at the Population Studies Center at the University of Michigan, also appraises the increased attraction of "magnet" cities to either baby-boom or elderly populations. He analyzes the rapid growth of minority populations in some metropolitan areas–in Los Angeles and San Antonio, minorities as a whole have actually become the majority. And, looking into the future of U.S. cities, he foresees prosperity for the major "world cities" and "command and control centers," spreading population inland from densely settled coastal areas. The ability of "smokestack areas" to rebound from economic setbacks and diversify remains a question mark.

–A.H.

Copies of the 56-page *Population Bulletin,* "Metropolitan America: Beyond the Transition," by William H. Frey, (Vol. 45, No. 2, July 1990), can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling 1-800-877-9881. Visa and MasterCard accepted. Prices for the *Bulletin* are: $7.00 a single copy; 2-10 copies, $6.50 ea.; 11-50 copies, $5.50 ea.; 51 or more, $4.00 ea.

Orders of $50.00 or less must be prepaid and include $1.00 or 3 percent of total order (whichever is greater) for postage and handling.

1990 Census Forges On

Despite widely reported problems with mail return of census forms (see *PT,* June 1990), the Census Bureau's door-to-door follow-up has yielded results. The mail return of forms in April 1990 was 63 percent. This was significantly lower than expected. Nonetheless, phone calls and visits by enumerators in the three months following Census Day have succeeded in netting the vast majority of outstanding forms. By July 1990 the Census Bureau had in hand 99 percent of forms, and 80 million had been processed. Processing is being done at the Bureau's seven giant regional centers around the country, where forms are microfilmed and the statistical data transferred to computer tapes. The font of decennial census data will begin to flow in January 1991.

–A.H.

SURVEY REPORT

Nigeria (Ondo State)

Although certainly not the largest in terms of area, Nigeria is by far the most populous of any African country—containing by current estimates more than 118 million people. The exact population of Nigeria nonetheless remains uncertain. The country has not held a population census since independence in 1963. A 1973 census was abandoned because of data irregularities.

The country's National Population Bureau began an Enumeration Area Demarcation Exercise in 1983 to attempt to develop a population-based sampling frame for use in various surveys. By 1985, this exercise had proceeded slowly, but had made the most progress in Ondo State, located in the southwest part of Nigeria and containing a population 2.7 million, according to the 1963 Census (the most recent census). For this reason, and because the state's Ministry of Health expressed a desire for data on health and fertility, a Demographic and Health Survey of Ondo was conducted during 1986-1987.

The majority of the 4,213 women interviewed in the Ondo State DHS are members of the Yoruba ethnic group (Ondo is 85 to 90 percent Yoruba); 84 percent are Christians, 40 percent live in urban areas, 52 percent in rural areas and 8 percent in riverine areas.

Fertility is high in Ondo: At fertility rates prevailing in 1986-1987, women were having 6 children each. This is also the ideal family size stated by married women.

Fertility was virtually the same in both urban and rural areas, but women with no education were having 6.7 children each, compared with 5.4 children for women with a secondary or higher education. There is some evidence, however, that younger women's fertility is lower than that for older women (those 40-49), who have mostly completed childbearing and had an average of 6.9 children each.

World Bank

Contraceptive use is low among married Ondo women.

The state's use and knowledge of family planning is low. Fifty-one percent of married women could recognize at least one contraceptive method, and most of these women also could name a source where they could obtain the method. However, only 13 percent of married women have ever used a contraceptive method, and only 6 percent are currently using a method.

The most widely used modern method is the pill (1.4 percent), followed by injection (1.2 percent) and IUD (0.7 percent). About 2 percent of married women use traditional methods, primarily periodic abstinence (1.9 percent). Use is much higher in the urban areas (8.9 percent) and among the more educated women (15 percent) than in the rural areas (4.5 percent) and among those with no education (2.9 percent). Thirty-seven percent of women using family planning obtain their methods from government hospitals or health centers. One-third of pill users receive supplies from pharmacies or shops.

Concerns over health appear to be a barrier to use of family planning. Of women who were not using family planning and did not want to become pregnant, 27 percent gave health concerns as the main reason for nonuse. Other reasons included lack of knowledge (18 percent) and opposition to family planning (8 percent). About three in four Ondo women say they approve of family planning, but only two in five think their husbands approve and an equal number do not know their husband's opinion.

Seventy-five percent of married women not using family planning are considered to be in need of it because they either want no more children (21 percent), or want to wait at least two years before having a child (54 percent). Of these women, only one in three intends to use family planning in the future.

Infant mortality in Ondo State was 56 deaths per 1,000 live births for the period 1981-86. Mortality did not differ greatly between rural and urban areas, but was markedly higher for infants born less than two years after a sibling (80 deaths per 1,000 live births) and for children born to mothers age 19 or less (93 deaths per 1,000 live births).

Prenatal care is widespread. For 80 percent of the births in the five years before the survey, mothers received prenatal care from trained medical personnel. For 71 percent of recent births, mothers received an anti-tetanus injection and 59 percent of the deliveries were attended by a doctor, nurse, or midwife at delivery. Still, women in the riverine areas appear to be at a disadvantage. Among children ages 12-23 months, 37 percent had health cards verifying their immunization status. Seventy percent of these children had received all of the recommended vaccinations. The Ondo State DHS found that 32 percent of children ages 6-36 months show signs of chronic malnutrition.

–B.S.

DEMOGRAPHER'S PAGE

Apportioning U.S. Congress: A Primer

by Dudley L. Poston, Jr.

As required by law, on or before December 31 of this year, the Secretary of Commerce will deliver to the President the April 1, 1990 total population counts for each of the 50 states.

These data from the 1990 Census will be used to decide how many U.S. congressional representatives are allocated to each state. The allocation procedure employed is known as the Method of Equal Proportions, implemented in 1940, which has now been used to apportion Congress in the five most recent apportionments. (From 1790 through 1980 there were 20 enumerations and 19 apportionments; see page 8.)

The first U.S. census was conducted a mere three years after the framing of the Constitution to provide an empirical basis for apportioning the U.S. House of Representatives and to determine the levels of taxation among the 13 states. This latter function was subsequently taken on by the Internal Revenue Service, but the former remains today as the principal reason and justification for conducting a decennial census. Indeed the requirement for a decennial census was written into the Constitution in 1787:

> Representatives and direct taxes shall be apportioned among the several states which may be included within this Union according to their respective numbers. . . . The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years in such manner as they shall by law direct.
>
> —The U.S. Constitution, Article 1, Section 2

However explicitly it may prescribe the distribution of members in the House of Representatives to the various states according to their respective populations, the Constitution is silent about how apportionment should be carried out. If James Madison had had his way, specific apportionment language would have been included in the Bill Of Rights. Indeed, the body of constitutional amendments passed by the Congress in September 1789 contained 12 amendments, not just the 10 known today as the Bill of Rights.

The first two of the 12 were proposals dealing with explicit procedures for apportioning the Congress and for compensating the members of Congress. But they met with such widespread dissatisfaction in the various states of the Union that most state legislatures defeated them during the ratification process. Our Bill of Rights is thus the third through the 12th amendments originally set out by Madison.

Dividing Up the Seats

Equity is the major issue in determining distribution of the U.S. House of Representatives. Since 1913, the number of House seats has been fixed at 435 (except for a brief period after the admission of Alaska and Hawaii). Further, partial representatives cannot be assigned to states, nor can representatives be given fractional votes or be shared by two or more states.

Given these parameters, how can the 435 seats be assigned so that the populations represented by each seat are as equal as possible?

The Constitution requires that every state be assigned at least one seat in the House. The first 50 seats are thus taken. What the Method of Equal Proportions does is specify how to divide up the remaining 385 seats. It tells us which states should receive second seats, which states should receive third seats, and so forth.

Considerations of equity dictate that the population requirements used to distribute seats beyond the initial seat increase proportionally. (The population should be higher to qualify for three seats than two, four seats than three, etc.) The Method of Equal Proportions, it is argued, increases the requirements as fairly as possible.

To use this method, the first step is to multiply the apportionment[1] population of each state by the following Equation 1:

$$\frac{1}{\sqrt{N\,(N-1)}}$$

where N equals the particular seat being claimed, i.e., the second seat or the third seat or the fourth seat, and so on. Multiplying this proportion by the states' populations provides numbers known as priority values.

I now examine the priority values for a few of the various numbered seats. Equation 2 (below) shows the calculation for a state's claim to a second seat:

$$\frac{1}{\sqrt{2\,(2-1)}} = \frac{1}{\sqrt{2}} = \frac{1}{1.41421356} = 0.70710678$$

Equation 3 shows the calculation for a state's claim to a third seat:

$$\frac{1}{\sqrt{3\,(3-1)}} = \frac{1}{\sqrt{6}} = \frac{1}{2.44948974} = 0.40824829$$

Equation 4 shows the calculation for a state's claim to a 40th seat:

$$\frac{1}{\sqrt{40\,(40-1)}} = \frac{1}{\sqrt{1560}} = \frac{1}{39.49683532} = 0.02531848$$

Since the various proportions are roughly equal to 1/N, the proportion a state would use to claim a second seat is obviously larger than that used to claim a third seat or a 40th seat.

Once the proportions for determining the priorities for the various seats have been computed, these proportions are multiplied by the apportionment populations of each of the 50 states. That is, the proportion used for determining the states' priorities for a second seat (0.70710678) is successively multiplied by the apportionment population of each state; and then this procedure is repeated using the proportion to determine the states' priorities for a third seat (0.40824829), a fourth, fifth, etc., up to 385.

After all of these multiplications have been done, the resulting priority values are then ranked in descending order. The 385 House seats are assigned to the states with the 385 high-

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est priority values.

Table 1 reports the application of the Method of Equal Proportions using 1980 Census counts and shows the states receiving the first six seats and those receiving the last six seats. California received the 51st seat. Its priority value for a second seat, 16,736,201, was obtained by multiplying its 1980 resident population of 22,668,562 by the "second seat" proportion shown in Formula 2 above of 0.70710678.

New York received the 52nd seat with its priority value for a second seat of 12,414,877, determined by multiplying its 1980 resident population of 17,557,288 by 0.70710678. Texas was next in line with its priority value for a second seat of 10,060,986; its second seat was the 53rd seat allocated.

As shown in the table, the Method of Equal Proportions allocated the 51st through 53rd seats to the three most populous states, California, New York, and Texas. But the fourth largest state, Pennsylvania, did not receive the 54th seat because its priority value for a second seat, 8,391,044 (its population multiplied by the "second seat" proportion shown in Formula 2), was smaller than California's priority value for a third seat, 9,662,650 (California's population multiplied by the "third seat" proportion shown in Formula 3.)

Pennsylvania and Illinois received their second seats as the 55th and 56th seats allocated. Ohio received its second seat as the 57th seat; New York's third seat was the 58th allocated; Florida's second seat was the 59th; and California's fourth seat was the 60th.

Table 1 also shows the states receiving the last six seats in the House, the 430th through the 435th seats. Observe for instance that Pennsylvania's priority value for a 23rd seat was larger than Colorado's claim for a sixth seat, so that the 431st seat was assigned to Pennsylvania and the 432nd to Colorado. New York received the 435th and last House seat allocated as its 34th seat.

Table 1. Application in 1980 of the Method of Equal Proportions: Allocating the First and Last Six Seats in the House of Representatives

Numbered seat in the House	State	Numbered seat in the state	Priority value
First six seats			
51	California	2	16,736,201
52	New York	2	12,414,877
53	Texas	2	10,060,986
54	California	3	9,662,650
55	Pennsylvania	2	8,391,044
56	Illinois	2	8,074,071
Last six seats			
430	Kansas	5	528,429
431	Pennsylvania	23	527,540
432	Colorado	6	527,427
433	Ohio	21	526,860
434	Florida	19	526,678
435	New York	34	524,157

The states of Indiana, Georgia, and California were next in line to receive the 436th, 437th, and 438th seats, were the House to have allocated three more seats. These would have been the 11th seats for Indiana and for Georgia and the 46th for California. I have estimated the populations that would have been needed for either Indiana or Georgia to have been allocated New York's 435th seat. If no other state's population changed, Indiana would have needed about 7,200 extra people in its 1980 count, or Georgia would have needed another 33,000, for either of the states to have been allocated the 435th seat that was assigned to New York.

Some states received only one seat: Alaska, Delaware, North Dakota, South Dakota, Vermont, and Wyoming. And a few other states received only two seats: Hawaii, Idaho, Maine, Montana, Nevada, New Hampshire, and Rhode Island. The second-seat priorities for the former group of states, and the third-seat priorities for the latter group of states, were all less than the 34th-seat priority of New York, which received the 435th and last seat.

Although the Method of Equal Proportions has been in use since 1940, during the 150 years prior to its adoption, apportionment procedures engendered a good deal of controversy, involving some of the better known figures in our country's heritage.

Apportionment's History

The Jefferson plan. The first apportionment procedure was established after considerable debate. In 1791 the House drafted their first apportionment bill, allowing one representative for every 30,000 in any state, 112 representatives in total. The Senate objected and drafted an alternative bill assigning one representative for every 33,000 in the country as a whole, or 105 representatives.

Congress then deadlocked on the apportionment question as the members from the various states realized that variations in the divisors influenced differently the numbers of representatives for the states. Moreover, the apportionment results were also affected by whether the fraction remaining from the quotient was dropped (Jefferson's plan) or rounded (Alexander Hamilton's plan). After extensive debate, the Congress finally wrote and passed a bill in March 1792 setting the House size at 120 using Hamilton's method of apportionment. Southerners saw this bill as discriminating against

Continued on next page

Demographer's Page

Continued from preceding page

the South, so President Washington exercised the first veto against it.

When Congress failed to override the veto, a bill following Jefferson's plan was passed setting the size of the House at 105, with a divisor of 33,000. Jefferson's plan is known as the Method of Rejected Fractions because after dividing the population of each state by 33,000 and apportioning to the state as many representatives as there were units in its quotients, the remainders were discarded or rejected.[2]

The Webster plan. The apportionment issue surfaced again in 1832 when Daniel Webster and others argued that the Jefferson plan "discriminated against small states by disregarding the fractions of a quota."[3] The heart of Webster's argument was that the Constitution stated that seats be assigned "as near as may be" to the population of each state. A modified form of his plan, awarding an additional seat to every state having one-half or more of the appropriate divisor, was used in 1840. The plan reduced the size of the House by 17 members (excluding the new representatives from California, Florida, Iowa, Texas, and Wisconsin). Although used only once, the Webster plan, because of its constitutional interpretation, continues to have a major influence on discussion about alternate apportionment methods.

The Vinton plan. With both the Jefferson and Webster plans, the House of Representatives could have a different number of seats each time it was apportioned. In our country's early years, this kind of variation was not seen as a major problem. But it soon became apparent that continued growth in the number of House seats could have deleterious effects on its daily operation.

Accordingly, Samuel F. Vinton, a Representative from Ohio, introduced his bill, which was adopted and employed in 1850 and used through 1900. It endeavored to combat the major problem of the earlier approaches, namely, their inability to predetermine the size of the House. The Vinton plan set a fixed number of members, derived a quota, and divided the population of each state by this quota. It then assigned one member to each state with less than one quota and assigned a number equal to the integer of the exact quota to all the other states. The remaining seats were assigned to those states with the largest fractions of a quota.

The use of this approach, however, resulted in what has become known as the "Alabama paradox," a situation whereby one state would lose a seat if the size of the House were increased. It was shown that if the House were expanded from 299 to 300 following the 1880 Census, the "remainders for Illinois and Texas would have passed that for Alabama, and Alabama would have lost a seat."[4]

The Major Fractions Method. In 1910, Congress adopted a more refined and complex version of the Vinton plan. Under this method, developed by Walter F. Willcox, a prominent statistician and demographer at Cornell University, each state was assigned one House seat and a priority list was then developed for assigning the remaining seats.

This method was called the Major Fractions Method because by "using an arbitrary divisor. . .every state with two or more seats received a member for each integer and each major fraction of the selected divisor."[5]

The method overcame the "Alabama paradox" problem of the Vinton plan. However, its interpretation of the Constitution's "as near as may be" phrase was the ratio of members divided by the population. An equally fair case could be made for the interpretation to be based instead on the equal distribution of Congressional districts, that is, population divided by members.

The Method of Equal Proportions. After the 1920 Census, there was no reapportionment of the House. Many members of the House believed the "1920 Census figures were inaccurate and. . .that temporary migrations caused distortions in the total reported."[6] Congress was also deadlocked in debate regarding the question of how to apportion. "Forty-two reapportionment bills were offered, but none passed."[7]

Finally in 1929 a committee from the National Academy of Sciences was convened to consider all the mathematically and theoretically correct apportionment methods.[8] The committee reasoned that since fractional voting was not allowed, apportionment based on proportions was not possible. The problem was really one of applied mathematics, or developing a solution based on a rationale outside mathematics.

The committee decided that the Method of Equal Proportions satisfied both sides of the apportionment problem: equitable population size of districts and number of seats. And the method did not discriminate by size of state. Congress then decided that automatic reapportionment would follow each census, and that results using both the Major Fractions and the Equal Proportions Methods would be

POSITIONS/PROFESSIONALS

African Dissertation Internship Awards are offered to doctoral students from sub-Saharan Africa by the Rockefeller Foundation, enabling Ph.D. students enrolled in U.S. and Canadian universities to return to Africa for extensive field research in areas relevant to economic development or poverty alleviation. Priority is given to research topics in agriculture, health, and life sciences, but other proposals are welcome. **Requirements:** Applicants are responsible for arranging affiliation with an African institution. The candidate's faculty adviser, the host institution in Africa, and the agency responsible for financing the student's graduate work, all must send letters of endorsement. **Deadlines for Applications:** October 1, 1990 and March 1, 1991.

For further information, contact: African Dissertation Internship Awards, Rockefeller Foundation, 1133 Avenue of the Americas, New York, N.Y. 10036.

reported to the President, but that the Major Fractions Method would be the one used.

The 1930 Census was the first census to follow these decisions, and both methods produced identical distributions. In 1940, though, the two methods gave different results. Under the Major Fractions Method, Michigan gained a seat lost by Oklahoma. Automatic reapportionment measures were then invoked, but the Congress immediately began to reconsider the two methods. They decided that only the Method of Equal Proportions be reported in 1950, and the decision was made retroactive so that Oklahoma could regain its seat. The Method of Equal Proportions has been used ever since.

The Future

In the early 1980s, questions were raised about the degree to which the Method of Equal Proportions was equitable. Some suggested that we should return to the approach originally proposed by Daniel Webster. It has been argued that the "time has come to restore Webster's formula as the only acceptable method of apportionment that meets the constitutional standard of one man, one vote."[9]

While the apportionment of the House after the 1990 Census will be based on the Method of Equal Proportions, it will be interesting to see whether discussions are introduced in Congress and elsewhere, about revising or changing the apportionment procedures. Many large Northeastern and Midwestern states lost representatives in 1980 because of population shifts; and many of these same states stand to lose even more representatives in 1990. For one reason, around 90 percent of our country's population gains in the 1980-1990 decade probably has occurred in the South and the West.[10]

If the proponents for a change in the apportionment procedure can successfully demonstrate that the Method of Equal Proportions indeed discriminates against the larger states, then we could well see renewed discussion about, and even changes in, the apportionment methodology by the turn of the century.

Continued on next page

SOFTWARE

UVPopSim is a demographic program that enables the user to project a population from one to 1,000 years in the future. Once data have been typed in (or imported from standard text files) in single-year or five-year, sex-specific age groups, immigration, emigration, and vital rates are all easily modeled and may be varied over time. Projections can be performed for numerous demographic measures, with results generated in tabular form or as population pyramids, and either viewed on-screen or sent to a printer.

UVPopSim stands for University of Victoria Population Simulation Program. The program runs on IBM PCs and compatibles (either from a floppy drive or a hard drive) and includes a context-sensitive help function. It requires 400K of free memory.

UVPopSim is available from Interactive Solutions, 3869 Persimmon Dr., Victoria, B.C. V8P 3R8, Canada. The price is $34.00; student and quantity prices on request. (For orders from within Canada, the prices are in Canadian dollars; for orders from outside Canada, these prices are in U.S. dollars.)

–A.H.

POPULATION UPDATE

Estimated United States Population:

As of April 1, 1990	250,688,000
As of April 1, 1989	248,127,000

The above estimates, the latest available, include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1060.

Estimated World Population:

As of July 1990	5,321,000,000
Annual growth	93,000,000

Extrapolation from the mid-1990 population on PRB's *1990 World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: February 1990

	12 months ending with February					
	Number		Rate			
Item	1990	1989	1990	1989	1988	1987
Live births	4,054,000	3,913,000	16.3	15.9	15.8	15.5
Deaths	2,167,000	2,160,000	8.7	8.8	8.8	8.7
Natural increase	1,887,000	1,753,000	7.6	7.1	7.0	6.8
Marriages	2,427,000	2,391,000	9.8	9.7	9.8	9.9
Divorces	1,172,000	1,193,000	4.7	4.8	4.7	4.8
Infant deaths	38,900	38,400	9.6	9.9	10.0	10.4
Population base (in millions)	. . .	. . .	248.8	246.1	243.7	241.4

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.
Source. Monthly Vital Statistics Report (Vol. 39, No. 2) from the National Center for Health Statistics.

Demographer's Page

Continued from previous page

Acknowledgment

Parts of this paper are adapted from D.L. Poston, Jr. and M.T. Coleman, "The Mechanics of Congressional Apportionment," *Intercom*, January 1981, pp. 8-10; and from pp. 115-119 (written by D.L. Poston, Jr.) in C.P. Kaplan, T.L. Van Valey and Associates, *Census '80: Continuing the Factfinder Tradition*, Washington, D.C.: U.S. GPO, 1980. I thank Robert Speaker and Sam T. Davis, both of the Census Bureau, for addressing some of my questions about apportionment and its applications in 1980 and 1990.

References

1. In the application in 1970 of the Method of Equal Proportions, the apportionment population of a state was defined to include its resident population as well as all American military and civilian personnel of the federal government from the state who were abroad on April 1, 1970, and their dependents. This extension of the definition owed to the increasingly large numbers of U.S. citizens overseas in 1970.
   This matter was reviewed and considered in 1950, 1960, and 1980, but the overseas populations were not incorporated into the apportionment populations for those years because their numbers were then deemed to be too few for inclusion. However, when the Method of Equal Proportions is applied using the 1990 Census data, the apportionment population will be defined in the same way as it was in 1970 so as to include the state's resident population, as well as the military and civilian personnel of the federal government and their dependents claiming the state as their state of record.
2. Walter F. Willcox, "Last Words on the Apportionment Problem," *Law and Contemporary Problems*, 1952, 17, pp. 290-291; Margo J. Anderson, *The American Census: A Social History*, New Haven: Yale University Press, 1988, pp. 15-16.
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4. Willcox, op. cit., p. 292.
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8. For more discussion, see Laurence Frederick Schmeckebier, *Congressional Apportionment*, Washington, D.C.: Brookings Institution, 1941; also, see Davis, op cit., p. 27.
9. M.L. Balinski and H.P. Young, "When House Seats Shift, Fractions Count," *Washington Post*, November 30, 1980, p. D5.
10. Judith Waldrop and Thomas Exter, "What the 1990 Census Will Show." *American Demographics*, January 1990, p. 24.

TAKE A NUMBER

A Million New Americans: Over 1 million aliens became permanent U.S. residents in 1989, a number comparable to the peak years of immigration in the early 20th century. But it may be a bit misleading to think of all these 1,090,924 persons in terms of "immigration" since almost half, 492,200 to be exact, received permanent resident status under the provision of the 1986 Immigration Reform and Control Act (IRCA). The balance of the 1-million-plus was the usual annual flow of immigrants and refugees.

Should the entire group be counted as "immigration" and placed in the table showing the U.S. time series on historical immigration trends? Technically yes, since the IRCA "entrants" are true legal immigrants. However, they haven't suddenly arrived all at once, because they were already here—having entered the U.S. over a considerable period of past years. This was a ticklish problem for statisticians at the Immigration and Naturalization Service (INS), who ultimately decided to include the IRCA entrants in the 1989 immigration total.

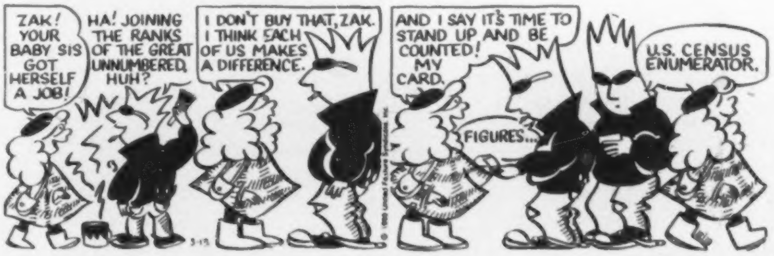
A graph of U.S. historical population trends now gives the impression that immigration took a sudden jump in 1989. But the spike in that year essentially represents a one-time influx resulting from specific legislation, and alone does not signify a sharp upswing in the long-term immigration trend.

Veteran Population: As U.S. involvement in major wars slips further into history, the overall size of the veteran population is expected to decline. The Department of Veteran Affairs projects that the 27.2 million veterans estimated in 1989 will decline to 24.1 million in 2000 and then to 13.0 million in 2040. Despite the decrease in total size, the number of veterans over age 65 will continue to rise and, in fact, "peaks" twice. World War II and Korean War veterans will cause a bulge to 9 million about 1999 when they hit 65 years, and Vietnam Era veterans will cause a second peak at 8.6 million in 2015. The DVA expects significant growth in the veteran population throughout the Sunbelt as older veterans follow the national trend towards a warmer clime at retirement. Increases in the number of veterans are expected in such warm-weather states as Florida, Arizona, Texas, and the Carolinas, even as declines will become apparent in the Northern states.

–C.H.

ADDENDA

"Miss Featherbee," by Leila Cabib


ZAK! YOUR BABY SIS GOT HERSELF A JOB!
HA! JOINING THE RANKS OF THE GREAT UNNUMBERED, HUH?
I DON'T BUY THAT, ZAK. I THINK EACH OF US MAKES A DIFFERENCE.
AND I SAY IT'S TIME TO STAND UP AND BE COUNTED! MY CARD.
FIGURES...
U.S. CENSUS ENUMERATOR.

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CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005

POPULATION GEOGRAPHY, by Gary L. Peters and Robert P. Larkin. (3rd ed.) Dubuque, Iowa: Kendall/Hunt, 1989. 295 pages. $27.95 paperback. ISBN 0-8403-4722-7.

"It is hard to admit," writes Mario Ortolani, in the special 20th issue of *Espace Population Sociétés,* "that one can advance and dynamize the discipline of geography by. . .appropriating the concepts, methods and research topics belonging to a distinctly qualified discipline: demography."

Geographer Ortolani's reluctance to acknowledge the demographic science stems from his belief that geography should do more than address population data as collections of statistical artifacts. Population geography analyzes patterns in the spatial distribution of people. What was the confluence of factors which led to settlement here, rather than there? What was the historical and geographical context in which these patterns unfolded?

The authors of *Population Geography* largely succeed in highlighting the subdiscipline's special qualities. Although several parts could just as easily have been written by demographers, the book devotes entire chapters to more distinctly geographical concerns such as the environment, food supplies, and mobility and migration.

As an introductory geography text, the authors rightly place great emphasis on high rates of population growth and their repercussions. The first chapter deals with recent trends in population growth and projections, and other chapters remind us of the relevance of current rates of growth for population distribution, environmental degradation, and food security. Chapters on mortality and fertility address the influence of these factors on current trends, and another chapter discusses the effects of organized family planning and "population control" policies on growth.

The text is amply peppered with tables, charts, and choropleth maps illustrating U.S. and world vital statistics differentials, densities, age distributions, etc. Although it would have been nice to see more on the distinct features of particular peoples, one text can only be expected to cover so much ground.

—Alex de Sherbinin

POPULATION GROWTH AND POVERTY IN RURAL SOUTH ASIA, edited by Gerry Rodgers. New Delhi: Sage Publications, 1989. 249 pages. ISBN 0-8039-9600-4.

This volume looks at important linkages between poverty and population in rural South Asia. Its empirical studies of India, Pakistan, Bangladesh, and Nepal, use a variety of analytical techniques and multiple focuses (household, village, and national levels) and analyze the major demographic variables (fertility, mortality, and migration).

All the studies start with two major premises. First, that the indirect effects of population growth on poverty are at least as important as the direct effects. And second, the authors use a broad definition of poverty, including relative deprivation and insecurity, and they examine the tradeoffs that families may make under various conditions.

This is a very interesting collection; all the papers highlight the far-reaching nature of poverty in rural South Asia and the gap between individual households' needs and those of aggregate social policy, particularly regarding fertility. The papers on Bangladesh and Nepal are particularly useful in outlining the general poverty context.

There was nevertheless one disturbing "straw dog" argument that ran throughout the book: that population specialists contend that population policies alone will solve the poverty problem. This perspective was most noticeable in Gerry Rodgers' introduction and his chapter on rural Bihar, and to some extent in the papers on Pakistan and Nepal. There may have been a time when population specialists over-argued the case for reducing population growth as a "cure-all" for poverty, but this reviewer doubts anyone argues it now.

This said, if readers can avoid getting irritated by the tone of the book, much valuable information is contained within.

—Nancy Yinger

RURAL AND SMALL TOWN AMERICA, by Glenn V. Fuguitt, David L. Brown, and Calvin L. Beale. New York: Russell Sage Foundation, 1989. 512 pages. $55.00 hardback. ISBN 0-87154-272-2.

In this book, the authors examine recent demographic shifts in rural America, including population distribution and small town growth. The book also addresses numerous rural/urban differences that show up in social demographic measures, such as household growth and structure, labor force and employment, as well as income and poverty.

Although urban-rural contrasts may have been reduced over the last several decades, the two areas remain in many ways different. These differences are clarified throughout the book. With a few exceptions, though, *Rural and Small Town America*'s analyses of demographic and socioeconomic trends over time end with the 1980 Census data. Many readers may find these cutoffs frustrating, since the trends in rural areas in the 1980s were so different from those in the 1970s.

—William P. O'Hare

SPOTLIGHT

SOUTH AFRICA

Population (mid-1990 est.): 39.6 million
Land area: 471,440 sq. miles
Population density: 84 per sq. mile
Births per 1,000 pop.: 35
Deaths per 1,000 pop.: 8
Rate of natural increase: 2.7 percent
Total fertility rate: 4.5 children per woman
Infant mortality rate: 55 infant deaths per 1,000 live births
Life expectancy at birth: 63 years
GNP per capita (1988 est.): $2,290
Capital: Pretoria

ZIMBABWE
MOZAMBIQUE
BOTSWANA
Pretoria
NAMIBIA
SWAZILAND
LESOTHO
SOUTH AFRICA

by Gwenda Brophy

The Republic of South Africa is currently in the throes of historic transformations which will have very important implications for the future economy, government, and society of this racially divided country, as well as for the Southern African region and beyond.

Southern Africa originally contained some 1 million Bantu tribesmen and a minority of other tribes, when, in 1652, the Dutch founded a small colony in the region. In the 19th century British colonists began moving in. The Boer War of 1899-1902 established the country as a British colony, but with a strong Boer (Cape Dutch) influence, and an enormous, but disenfranchised nonwhite majority.

Some 68 percent of the country's 38 million population are black; 18 percent, European (mainly Afrikaner and British); 11 percent, colored (that is, government-defined as "mixed race"); and 3 percent, Asian. The Group Areas Act decrees where different racial groups may live; but in spite of that Act, in some cities de facto "gray areas" have been developing.

In absolute terms, the black majority's living standards are among the highest in Africa; substantial differentials nonetheless exist between the black and white population in terms of income, education levels and health indicators. Despite some development of economic enclaves, severe impoverishment exists in the four independent "homelands" set up for blacks – Boputhatswana, Transkei, Ciskei, and Venda – none of which is recognized as a geopolitical entity by the international community.

Although South Africa is rich in natural resources, gold, diamonds, and strategic minerals, for over half a century the country has followed a policy of import substitution in major industries. International economic sanctions, imposed because of the country's policies of apartheid, have restricted both South Africa's exports and the flow of investment from outside.

Population growth is the "greatest long-term problem South Africa faces," according to the Health and Population Development Minister, and South Africa is increasing at 2.6 percent per year. A broad-based population program was launched in 1984 "to establish an equilibrium between population size and available resources." Current fertility levels for the black population are 4.9 children per woman; for mixed races, 2.9; Asians, 2.3; and whites 1.7.

These fertility levels largely reflect differentials in contraceptive usage, which are high among the white population. In the black population, prevalence levels vary enormously, being much higher in urban than in rural areas. Regarding another influence on fertility – marriage – one in three marriages among whites now ends in divorce, according to a recent study. There has long been a pattern of union instability among the black population, while Asian marriages are apparently the most stable of all.

Legal abortion is very limited in South Africa. The Abortion Reform Action Group has been campaigning for changes in the law. A clinic in Boputhatswana, a homeland not bound by South African law, recently offered abortion services; women from cities as far away as Cape Town and Soweto came to utilize the clinic.

As South Africa enters the 1990s, it faces continued international pressure for change; internal pressure has come not least from South Africa's own business leaders, who have seen at first hand the cost of separate development in terms of work force efficiency. The country currently faces the structural problem of serious skill shortages, coexisting with high black unemployment. Massive outflows of young professionals, in the last few years mainly to the United Kingdom and Australia, have also had serious consequences.

The Bush Administration looks to South Africa as the "motor of development" in the Southern African region; events there over the next few years may well be crucial for a substantial portion of sub-Saharan Africa.

Gwenda Brophy is currently a consultant at Southern African Demographic Research, Swaziland.

POPULATION TODAY

Vol. 18, No. 9 September 1990

FEATURES

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Maybe more (or fewer) representatives than expected, depending on the "error of closure"

4 **Dispatch from the Soviet Union**
Census finds wide variations in growth rates within republics, while urban declines are reported in Central Asia

4 **7 million enumerators conduct China's epic count**
The world's largest census is expected to tally 1.12 billion people; results to come in November

5 **Fertility has stopped falling in El Salvador**
And contraceptive use has stopped rising in this most densely populated Central American country

6 **China's population policy after Tiananmen**
Contention over limiting births continues to divide hard-liners and soft-liners

8 **An invitation to PRB members**

9 **George B. Simmons (1940-1990)**

9 **Louis M. Hellman (1908-1990)**

12 **Discover demographic Rhode Island**
The nation's smallest state has industry, ocean, and 998,000 Rhode Islanders

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Architect of the Capitol

Congress waits for demographic tremors. (See page 3.)

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FROM THE EDITOR'S DESK

Herewith, a clip-and-save list of synonyms for writers who turn numbers into words: 94 verbs, nouns, and adjectives to describe the crests and troughs of population trends.

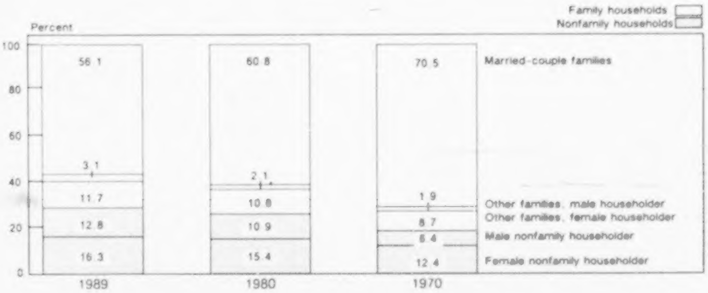
–Art Haupt

	Change	Slight change	Extreme change	Noun	Useful modifier
U P	climb curve up experience a rise gain go up grow increase mount reach rise slope upward	bump up creep up edge up nudge up progress	explode jump mushroom shoot up skyrocket snowball soar surge swell take off zoom	boost gain growth increase jump rise upswing upward trend	abrupt accelerating almost imperceptible creeping dramatic gentle gradual infinitesimal little by little measurable persistent precipitous rapid robust sharp significant slight slow steady steep substantial sudden
D O W N	brake curve down decline decrease descend drop ebb experience a decline fall go down lose shrink sink slide slope downward	abate dip ease edge down regress slip slump subside taper off	dive nosedive plummet plunge skid tumble	decline decrease dip dive downswing downward trend drop ebb fall loss negative growth reduction slide	

Source. PRB's *INTERCOM*, July/August 1982.

SPEAKING GRAPHICALLY

Changing U.S. Household Composition



The bar chart above shows the composition of U.S. households in 1989, 1980, and 1970. (They totaled 92.8 million in March 1989.) Married-couple families make up the majority of households, but have lost ground to nonfamily households headed by male or female householders. Of nonfamily households, depicted in gray above, an estimated 84 percent (as of 1989) consist of only one person.

Source. U.S. Census Bureau, *Current Population Reports*, P-20, No. 441.

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Will Surprise Counts Affect Congress?

Some surprises could be in store when Congress is reapportioned following the 1990 Census. Several states may end up with more or fewer members of the House of Representatives than had been anticipated.

Until the census results are actually released, speculation about post-1990 House seats must rely on current estimates for each state. Earlier projections by PRB, like those of other organizations, have relied on state population estimates provided by the Census Bureau.

Using the latest state estimate makes sense if the census count and the estimates are likely to be close. But they are not always close; a decade ago the final 1980 Census tally was almost 5 million higher than expected. The difference between the actual and expected census counts is referred to as the "error of closure." In 1980 the higher counts chiefly benefitted Sunbelt states, such as Texas, California, and Florida, at the expense of Northern states.

What would happen if the 1990 count contains an equal shocker? PRB demographers William P. O'Hare and Carl Haub considered what impact a large error of closure might have on 1990 apportionment projections.

In order to simulate the likely impact of an error of closure similar in magnitude to that of 1980, O'Hare and Haub calculated the error of closure for each state in 1980 and applied that factor to the most recent state projections for 1990. These adjusted state populations were then incorporated into the apportionment formula. (See *PT*, July/August 1990, for a detailed description of how apportionment is calculated.)

The new projections also take into account a recent Commerce Department policy shift to count approximately 1 million overseas military personnel and civilian federal employees and their dependents as residents of their home state of record, for purposes of census enumeration.

Originally, the Department had planned to include these overseas

Continued on page 10

Projected House of Representatives Seats after the 1990 Census

		House seats after 1990 apportionment, based on:			
Area	Current (after 1980) House seats	Standard projection	Overseas military in home state	Error of closure adjustment	Overseas military in home state plus error of closure
Northeast	95	88	88	86 *	86 *
Maine	2	2	2	2	2
New Hampshire	2	2	2	2	2
Vermont	1	1	1	1	1
Massachusetts	11	10	10	10	10
Rhode Island	2	2	2	2	2
Connecticut	6	6	6	5 *	5 *
New York	34	31	31	30 *	30 *
New Jersey	14	13	13	13	13
Pennsylvania	23	21	21	21	21
Midwest	113	105	104 *	103 *	103 *
Ohio	21	19	19	19	19
Indiana	10	10	10	10	10
Illinois	22	20	20	20	20
Michigan	18	16	16	16	16
Wisconsin	9	9	8 *	8 *	8 *
Minnesota	8	8	8	7 *	7 *
Iowa	6	5	5	5	5
Missouri	9	9	9	9	9
North Dakota	1	1	1	1	1
South Dakota	1	1	1	1	1
Nebraska	3	3	3	3	3
Kansas	5	4	4	4	4
South	142	150	151 *	153 *	153 *
Delaware	1	1	1	1	1
Maryland	8	8	8	8	8
Virginia	10	11	11	11	11
West Virginia	4	3	3	3	3
North Carolina	11	12	12	12	12
South Carolina	6	6	6	6	6
Georgia	10	11	11	12 *	12 *
Florida	19	22	23 *	24 *	24 *
Kentucky	7	7	7	7	7
Tennessee	9	9	9	9	9
Alabama	7	7	7	7	7
Mississippi	5	5	5	5	5
Arkansas	4	4	4	4	4
Louisiana	8	8	8	8	8
Oklahoma	6	6	6	6	6
Texas	27	30	30	30	30
West	85	92	92	93 *	93 *
Montana	2	1	1	1	1
Idaho	2	2	2	2	2
Wyoming	1	1	1	1	1
Colorado	6	6	6	6	6
New Mexico	3	3	3	3	3
Arizona	5	6	6	7 *	7 *
Utah	3	3	3	3	3
Nevada	2	2	2	2	2
Washington	8	8	8	8	8
Oregon	5	5	5	5	5
California	45	52	52	52	52
Alaska	1	1	1	1	1
Hawaii	2	2	2	2	2

Note. Asterisks indicate state totals that differ from standard 1990 projections.
Source. The projections were made by Dr. William O'Hare, PRB's Director of Policy Studies.

A Report from the Soviet Union's 1989 Census

Data from the Soviet Union's 1989 Census remain scarce. The following article comes courtesy of the Novosti Press Agency. Some numbers differ from PT's March 1990 report. The author, Solomon Bruk, is doctor of geography and senior researcher at the Institute of Ethnography of the USSR Academy of Sciences.

According to preliminary results of the Soviet census held on January 12, 1989, the overall population of the Soviet Union was 286.7 million.

This marks an increase of 24.3 million, or 9.3 percent, since the previous census of January 17, 1979. During 1969-1979, the respective figures were 22.9 million and 9.6 percent.

The new Soviet rates show strong fluctuations at different times during the decade and across different geographic areas. Up until 1964 the annual average increase exceeded 3 million, with a peak of 3.8 million in 1960. By 1980 the absolute increase had gradually declined to 2.1 million, after which it began to pick up again, attaining a maximum of 2.9 million in 1986. A discernible increase in the birth rate during the first half of the 1980s was linked to increased state child allowances, as well as increases in the number of women within the age bracket of maximum fertility–20-29 years–and increased fertility rates among younger women.

The census found a national birth rate of 18.8 live births per 1,000 population, as of 1988. The rate varied significantly between republics: from Tajikistan's 40.0 live births per 1,000 population down to the Ukraine's 14.5. The current birth rates in the Central Asian republics are more than twice those of the Russian republic, the Ukraine, Byelorussia, and the Baltic republics, and one-and-a-half times those in the remaining republics.

The Soviet Union as a whole increased by 0.87 percent in 1988. In the Russian republic and the Ukraine, Byelorussia, and the Baltic republics the average growth was 0.47 percent; in the four Central Asian republics, it was 2.82 percent; and in the remainder of the country, 1.5 percent. In 1989 the Central Asian republics accounted for 37.2 percent of the country's population increase.

Consequently, absolute numbers of natural increase varied remarkably. The 1988 annual increase was 779,000 in the Russian republic, whose population was 147.4 million. Uzbekistan meanwhile experienced growth almost as great, 560,000, though its population was only 19.9 million.

Between 1979 and 1989, the rural population throughout the country as a whole fell by more than 1 million, down to 98 million. In some republics, the declines were more dramatic: by 3.2 million in the Russian republic and by 2.1 million in the Ukraine. During the same 10-year period, rapid rural increases took place in Uzbekistan (a 2.8 million jump), nearly 1 million in Tadzhikistan, and half a million each in Turkmenistan and Kirgizia.

The reasons for rural decline are varied, including unsuccessful economic experiments in agriculture, the transfer of rural workers to urban areas, and continuing rural-to-urban migration.

From the 1979 Census to the present one, the Soviet urban population increased by 25.2 million: 14.5 million of this was due to natural increase, 8.9 million due to migration from the countryside, and 1.8 million due to reclassification of rural settlements.

Consequently, the urban population has increased from 62.3 percent to 65.8 percent. (Back in 1970 it measured 56.3 percent.) Differences between republics in level of urbanization are rapidly narrowing. In 10 republics out of the 15, the urban population is larger than the rural, and even in the most rural republics, a third (or close to it) of the population is urban.

At the same time, the Central Asian republics deserve a closer look. Over the past 10 years the proportion of urban dwellers there (Uzbekistan excepted) has actually declined, a most unusual phenomenon. Instances of decline in the proportion of city dwellers have been recorded in highly urbanized countries, but not in countries with low or medium urbanization akin to the levels recorded in these Soviet republics.

–Solomon Bruk

World's Largest Headcount Goes Forward in China

An army of 7 million census enumerators fanned out all over China July 1-10, as the world's most populous country conducted its fourth national census. China's 1990 population is estimated to be 1.120 billion.

This time around, the census came to the people. During previous censuses–most recently in 1982–the people had been required to go to the census (that is, report to local registration stations).

China specialists are looking forward to seeing what light the census results shed on two important demographic trends during the 1980s. One is the number of "illegal" children born in disregard of the policy of one child per family. The other is the extent of illegal migration to the cities (thought to be in the millions) that has followed economic restructuring.

Because of possible legal problems, some citizens may be reluctant to answer the questions relating to these issues. Census officials have promised that results will be confidential and will not be used to prosecute citizens whose status is less than optimal.

As was the case in 1982, tabulation of the data in the world's most populous country is expected to proceed rapidly. Initial results will be published in October 1990, only three months after the tally took place, and are to include figures for the total population, the number of households, number of permanent residents, vital statistics, ethnic group breakdown, and education.

A 10-percent tabulation will be available by the end of May 1991, and complete figures will be published in June 1992.

–A.H.

SURVEY REPORT

El Salvador

El Salvador is the smallest and most densely populated country in Central America. Land distribution is a major concern of the country's mostly agrarian population of 5.3 million and issues of redistribution have contributed to the civil war of the past decade.

Despite security problems related to the civil unrest, four surveys have been completed since 1975 that document trends in the fertility and contraceptive behavior of the population. The most recent, the 1988 Family Health Survey (FESAL88), is the second survey to include information on maternal and child health. Conducted by the Asociación Demográfica Salvadoreña with technical assistance from the U.S. Centers for Disease Control, Division of Reproductive Health, FESAL88 interviewed a total of 3,579 women age 15-44 between May and July 1988.

Although total fertility declined from an average of 6.3 to 4.5 lifetime births per woman between 1978 and 1985, the survey found no significant change between 1985 and 1988. Contraceptive use shows a similar pattern, increasing by 26 percentage points between 1975 and 1988 with virtually all of the increase occurring before 1985. Some 47 percent of married women are using modern methods of family planning (traditional methods were not included). Female sterilization is by far the most commonly used method—about one-third of married women have been sterilized. Temporary methods of family planning are used by about 17 percent of married women.

Other determinants of fertility, such as age at first marriage and breastfeeding practices, also showed little change between 1985 and 1988. The average age of marriage rose slightly between 1985 and 1988, from 19.8 to 20.3 years, with almost all of the increase taking place in the urban areas. Rural women tend to marry about two years earlier than urban women. Ninety-five percent of women interviewed breastfed their last child, and the average duration of breastfeeding was 17 months, one month longer than the period reported in 1985.

According to the survey, 18 percent of all women are estimated to be in need of family planning because they are fecund and not using contraception but do not want to become pregnant soon or at all. Among women who say they want no more children, 63 percent give economic problems as the reason. Another 27 percent say they have reached the number of children they desire. About half the women not currently using family planning say they intend to use a method in the future; however, only half of these women say they know where to obtain a method.

FESAL88 contained a special module to gather information on the fertility behavior of women age 15-24 years. The fertility rate for women age 15-19 was found to be 139 births per 1,000 women, the highest rate found for any country in Latin America or the Caribbean. Twenty-three percent of women age 15-24 reported that their first sexual experience was premarital, and an estimated 12 percent of ever-in-union women age 15-24 had a premarital conception. Yet 70 percent of those whose first sexual experience was premarital said they did not sanction premarital sex. Nine in 10 women age 15-24 said they think there should be special family planning services available for young adults.

World Bank

Most Salvadoran children are immunized.

About two-thirds of the married women who had a birth in the five years prior to the survey received a prenatal examination and a similar proportion received an anti-tetanus toxoid injection. Most of these women were served by the Ministry of Health. About half the women with a recent birth delivered in a medical facility, while 38 percent gave birth at home with the assistance of a midwife.

Although only 40 percent of married women with recent births reported receiving postnatal care, 76 percent of infants received well-baby care. About 60 percent of children under age five have been immunized against polio or DPT (diphtheria-pertussis-tetanus), while about 80 percent are reportedly protected against measles or tuberculosis. One-third of the children under age 5 had had diarrhea in the two weeks prior to the survey, and 87 percent received some treatment. Only 13 percent of those treated received oral rehydration solutions, while 81 percent were treated with pharmaceutical products—most likely a costly and ineffective treatment.

—B.C.S.

DEMOGRAPHER'S PAGE

China's Population Planning After Tiananmen

by H. Yuan Tien

"Our nation's population control effort was out of whack during the 7th Five-Year Plan [1985-1989]," Ma Bin told the Fifth National Conference of the China Demographic Society in Beijing in January 1990.[1]

The conference had been called to address the "course of China's population growth and countermeasures." At age 75, Ma serves as an adviser to the Development Research Center of the State Council. He has long followed a hard line on Chinese population planning issues.[2] His acerbic words expressed his annoyance at the upturn in China's fertility after 1985.

The Demographic Society's leadership agreed to hold the conference a little over two months after the tragic events in Tiananmen Square in June 1989. The Society last met in 1985. The intervening years had seen a rise in the national birth rate from 18 births per 1,000 population annually to 22 or 23. Similarly, the total fertility rate rose from an average 2.2 lifetime children per woman to 2.6.

By official estimates, China's population topped 1.1 billion at the end of April 1989. This may be an underestimation because of many additional, unreported births. These increases kindled doubt about the feasibility of the national goal, outlined in 1984, of holding the total population to "around 1.2 billion" in 2000. Chinese demographers and population planning officials alike came under pressure to sort out these developments. The 1990 conference itself was spawned out of heightened concern for the nation's demographic future.

The nation's recent nondemographic events stole the spotlight from the conference's demographic work. Festering discord over China's population planning regulations in effect during the previous five or six years lay at the heart of the confrontation. In particular, the regulations' critics and supporters disagreed diametrically on the "one child per family" policy and the subsequent policy relaxation that allows nearly half of China's couples to have a second child.

The confrontation occurred in the shadow of the dismissal of party Chairman Zhao Ziyang and the ascendancy of political hard-liners after the Tiananmen events. Past and present heads of China's National Family Planning Commission were among the protagonists on opposing sides of a most spirited exchange on China's population planning effort.

> "A degree of flexibility can be permitted," Zhao wrote. "It is of no major consequence"

Background

The one-child policy had been in effect for about three years when Chen Muhua, the first head of the National Family Planning Commission, was appointed to a higher post. Her successor, Qian Xinzhong, pursued the goal of minimal fertility with greater vigor during his 1982-1983 tenure, including an all-out push to increase sterilizations.

At the conference, these two former family planning chiefs reiterated their belief that energetic measures are required to promote population planning in general and to induce a transition to minimal fertility in particular. Dr. Qian also averred that successful fertility reduction is unrelated to socioeconomic development and that China's low level of socioeconomic development should be no excuse for slackening resolute effort to implement population planning.

This renewal of hard-line advocacy was the latest in a train of events triggered by the inauguration of the one-child policy in 1979. Misgivings and resistance accompanied this policy from the start and were widespread among couples and population planning personnel in the countryside. Population planning controversies arising from a backlash from those affected truncated Dr. Qian's tenure in office.

Wang Wei, his successor, sought ways to attenuate the considerable dissatisfaction. The policy of "opening small holes" (i.e., making exceptions to the one-child limit depending on local conditions) was authorized in 1984. Exemptions allowing couples to have a second child multiplied thereafter, in response to massive demand for more than one child, especially from the poorer agricultural areas. Starting in 1986, a second chance was soon allocated to up to 20 percent of couples with one female child. This guideline and the earlier policy shift drew public warnings from population planning hard-liners.[3]

Peng Peiyun, the current head of the Commission, replaced Wang in 1988. She assembled China's leading demographers into a National Committee of Consultants on Family Planning. They included numerous proponents and supporters of the less stringent measures initiated by Wang. Peng further extended the scope of exemptions. As many as 48 percent of rural couples are officially allowed to have another child after an appropriate interval should their first child be a girl. In reality, the great majority of peasants have borne two children or more.[4]

The one-child policy thus was relegated to limbo. Against this backdrop the hard-liners sought to reassert them-

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selves. The sound of population politics loudly filled the 1990 Conference.

Hardball Politics

Adopting the same stance as Ma's at the meeting, though in separate papers, were a few other specialists in demography and related fields. They belonged to, or had been in touch with, a study group organized and headed by Ma since 1986. One aim of the group was to orchestrate countermeasures against the widening erosion of the one-child policy. The hard-liners voiced similar assessments of why the Chinese fertility rose after 1985 and who was responsible for it.

In their view, the upturn stemmed from "the practice of 'opening small holes' and the notion of 'holding the population to *around* 1.2 billion.' " Specifically, Ma and his fellow hard-liners charged that:

1. China's fertility upturn dated from 1984, when "two young cadres with the support of certain leading members of the National Family Planning Commission recommended the acceptance of the 'around 1.2 billion' notion." Chairman Zhao Ziyang immediately endorsed it in July. Because the word "around" is utterly nonspecific, they charged, it generated such figures as 1.25 billion, 1.27-1.28 billion, and the like in official pronouncements, giving rise to confusion.

More important, this change in wording transgressed against the bedrock target of "keeping the population total *within* 1.2 billion" set and reaffirmed by the Party Congress and the Central Committee and the National People's Congress between 1978 and 1984. This transgression was compounded by the "irresponsible and frivolous" notations that Zhao inscribed on the memo submitted by the two young staff members. "A degree of flexibility can be permitted in the population target for the century's end," Zhao wrote. "It is of no major consequence."

2. "We estimate that some 33 million babies were born outside population plans during the 7th Five-Year Plan," the hard-liners charged. These unauthorized births occurred as a result of "opening small holes" while leaving "big holes" unplugged, and came after Zhao sanctioned the "two births with spacing" experiment in selected rural districts, outlined by the two young staff members in 1984.

This approval contradicted the guidelines stressed by the party and government that "couples in the villages are generally encouraged to have only one child; only in case of real hardship, the request of some couples to have a second child may, after investigation, be allowed according to plan." On no occasion did the government ever limit the one-child policy to the cities, exempting the villages.

> Hard-liners have decried the de facto demise of the one-child policy

This bewildering state of affairs continues today, the hard-liners charged. At the July 1989 meeting of the National Committee of Consultants on Family Planning, Peng insisted that there seemed to be no need to promote the "one-child" ideal in the villages. At a party conference that October, she went on to disclose that to avoid the appearance of gender discrimination, current practice has been to allow couples with a single infant girl to have a second child by listing them as "cases of real hardship."

3. The goals of "keeping the population total within 1.2 billion" and implementing the one-child policy were hastily jettisoned only some five years after adoption. Their dislodgement started with the so-called "moderate and gradual changes" introduced by Wang in 1984, in reaction to "unreasonable foreign criticisms based on 'humanitarianism and human rights'" and "banners of 'democracy' held up by a few persons in China." Wang, supported by Zhao, declared that "'opening small holes' is a continuous process; do not cap it. Our thinking should never be fixed on one thing, nor should we cap our thinking."

China's population planning strategy and tactics consequently have become a charade. The "instabilities in policy aims and the many changes in policy measures" perplexed the masses. They befuddled the sense of urgency among population planning cadres everywhere. Chaos spread, morale declined, organization unraveled, and implementation waned. These instabilities brought on the rise in the birth rate after 1985.

"The long-term well-being of the whole Chinese people," stated hard-liner Yu Jinyuan, "thus is being sacrificed merely to satisfy the momentary interests of a certain portion of peasants at present."[5]

Hard-Line Measures

Thirty specific recommendations were drawn up by Ma's study group in February, but modified after June 1989. They urged enactment of laws governing population planning, marriage, and "eugenic protection" (i.e., child health, prenatal care, etc.). Their recommendations, intended to roll back the liberalization of population planning regulations, call for:

1. A nationwide head tax.
2. Special "social nurture" levies on parents with children born outside national population plans.
3. Heavy taxes on those with excessive births; tax exemption for parents with only one child.
4. An end to supplementary land allotments and grain ration to peasant households with excessive births.
5. A second "open letter" to underscore population planning. (The first

Continued on next page

Demographer's Page

Continued from previous page

"open letter," issued in 1980 to all members of the Communist Party and Youth League, exhorted them to set examples for others to emulate and stressed the "promotion of the 'one-child' ideal in order that our nation's total population be kept within 1.2 billion in the year 2000.")

Outlook

The controversy over population planning in China has thus spun into the area of politics. Hard-liners have decried the de facto demise of the one-child policy and the desecration of the "within 1.2 billion" target and identified their nemeses. The clash has been turned almost exclusively into an argument over transgressions against various policy guidelines established in 1978-1980.

The debate has made little mention of the circumstances surrounding the "low" fertility in 1981-1984 just before the upturn, or the backlash against the government's one-child campaign from peasants in the country's poor areas. Nor has much consideration been given to the country's falling median age, the drop in age at first marriage, and the demographic impact of agricultural decollectivization and economic deregulation.

The dynamics of post-Tiananmen politics would seem to offer critics of the more permissive population measures an advantage in advancing their agenda. The complex issues involved in the rise in fertility after 1985 do not seem to have been given the attention they deserve. What then is the outlook for China's population planning effort?

In their drive to maintain the political status quo, the party and government have invoked strong restraints in the name of stability since June 1989. This phraseology permeates the sayings of high officials concerned with suppressing an allegedly small number of "counterrevolutionaries."

At the close of the conference, Peng stressed stability—the need to stabilize current population planning regulations.[6] The Report on Government Work received by the National People's Congress in April 1990 reflected her position: "The third reproductive peak since the establishment of our nation will hit us during the early years of the 1990s. We must resolutely stabilize the current population planning measures, and ensure their implementation at the grassroots level."[7]

Parenthetically, the one-child policy and the "within 1.2 billion" target originated from within the council of a small number of high party functionaries. The subsequent relaxation and revision of these policies, on the other hand, mirrored the input from the numerous family planning personnel at the grass-roots level and specialists in institutions of higher learning and research institutes throughout China. They represented an accommodation with rural reality and the dynamics of China's population politics.

Numerous conference participants spoke out, addressing the issue from a range of perspectives: The 1979 leap to the stringent one-child policy was, one writer argued, an abrupt step based on the simplistic views that population numbers are the cause of all the nation's economic difficulties and that population growth could be stopped overnight by fiat.[8] The changes since 1984, another participant stressed, represented not regressions in population planning regulations but improvements. Unless the critics intend to totally repudiate country and party, they should not adopt a negative attitude toward the changes simply because Zhao Ziyang was the premier involved in national affairs of all sorts, including population planning at the time.[9]

Stability, the hard-liner's byword, also studded the titles and texts of a dozen other conference papers defending the less stringent post-1984 policy.[10] The picture of China's population politics today is of a majority holding fast against the policy rollback sought by a small minority of hard-liners. The sword of "stability" evidently cuts both ways.

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An Invitation to PRB's Awards Dinner

The Board of Trustees and the Staff of the Population Reference Bureau, Inc., cordially invite you to celebrate PRB's 61st anniversary at the 1990 Annual Awards Dinner recognizing outstanding contributions in the field of demography.

The dinner speaker will be W. Parker Mauldin, Program Associate, the Rockefeller Foundation.

Date: Thursday, November 1, 1990
Time: Cocktails (cash bar) 6:30 pm
Dinner and Awards Ceremony 7:15 pm
Place: National Press Club
Washington, D.C.

Awards Dinner tickets are $40 each. Send check to Population Reference Bureau, Attn.: Colette Thomas, 777 14th St. N.W., Suite 800, Washington, D.C. 20005. Checks payable to PRB.

George Simmons (1940-1990)

George B. Simmons, who specialized in population planning and international health at the University of Michigan, died July 15. He was 50.

Simmons was chairman and professor of the Department of Population Planning and International Health. His research focused on factors that determine the success of family planning programs in less developed countries.

He graduated from Harvard University and received a Ph.D. in economics from the University of California, Berkeley.

He joined the University of Michigan in 1969 and from 1978 to 1981 directed the University's Program in Population Planning. He was a member of the Population-Environment Dynamics Project. From 1983 on, he chaired the National Academy of Sciences' working group on family planning effectiveness.

He was also a consultant to many agencies, including the International Centre for Diarrhoeal Disease Research, Bangladesh; the National Institutes of Health; and the Population Council.

–A.H.

Louis Hellman (1908-1990)

Louis M. Hellman, former PRB trustee and medical director, died July 22 in Washington, D.C. He was 82.

Born in St. Louis, Hellman graduated from Yale University and Johns Hopkins University medical school. After a distinguished career in obstetrics, during which he co-authored several standard texts, he served from 1970 to 1977 as Deputy Assistant Secretary for Population Affairs of the U.S. Department of Health, Education, and Welfare. In 1974 he traveled to Bucharest, Romania, as part of the U.S. delegation at the World Population Conference.

From 1975 to 1977 he was a member of PRB's Board of Trustees; from 1977 to 1979 he was the Bureau's Director of Medical Information.

–A.H.

SOFTWARE

NSFA is an inexpensive fertility model package based on *Lotus 1-2-3*. The program is designed to be a teaching tool in demographic methods.

NSFA stands for New Shapes for Fertility Analysis. It consists of both templates and supplementary programs and includes an animated self-instruction module that explains the dynamics of two fertility models, as well as supplementary programs for fitting models to actual data, producing new age-specific fertility rate series from models, projecting fertility, and evaluating data.

NSFA comes with routines using the Brass relational model, the Coale-Trussell fertility model, Sivamurthy's principal component model, rational splines interpolation, and period-cohort decomposition. Two sample worksheets with data on 58 countries and an instruction manual are included.

NSFA requires an IBM PC or compatible and *Lotus 1-2-3* version 2.0 or higher. Monitor and graphics card should be specified when ordering. Contact: Garcia-Bogue Research & Development, Ltd., P.O. Box 37-7710, Chicago, Ill. 60637. Phone 312-947-2014. Fax 312-947-2012. Price for one computer/user: $14.95 plus $4.55 postage and handling in the U.S. (Ill. residents add 8 percent tax). Foreign mailing rates on request.

–A.H.

POPULATION UPDATE

Estimated United States Population:

As of May 1, 1990	250,893,000
As of May 1, 1989	248,312,000

The above estimates, the latest available, include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1061.

Estimated World Population:

As of September 1990	5,337,000,000
Annual growth	93,000,000

Extrapolation from the mid-1990 population on PRB's *1990 World Population Data Sheet.*

Latest Provisional Statistics for the U.S.: March 1990

	12 months ending with March					
	Number		Rate			
Item	1990	1989	1990	1989	1988	1987
Live births	4,070,000	3,923,000	16.3	15.9	15.7	15.5
Deaths	2,167,000	2,152,000	8.7	8.7	8.9	8.6
Natural increase	1,903,000	1,771,000	7.6	7.2	6.8	6.9
Marriages	2,423,000	2,375,000	9.7	9.6	9.8	10.0
Divorces	1,177,000	1,192,000	4.7	4.8	4.8	4.8
Infant deaths	38,900	38,400	9.6	9.8	10.1	10.3
Population base (in millions)	...	...	249.0	246.3	243.9	241.6

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.
Source. Monthly Vital Statistics Report (Vol. 39, No. 3) from the National Center for Health Statistics.

Reapportionment

Continued from page 3

personnel as residents of the last state where they had lived for at least six months. That method would have concentrated these personnel in a few states with large military bases. The new method, spurred by legislation pending in Congress, is expected to distribute this population more evenly around the country.

The table on page 3 shows who will win and who will lose if the U.S. records another "big" count in the same states as 1980. Several states may end up with more or fewer members of the House than had been anticipated.

PRB's illustrative projections do not change the size of most state delegations. But seven states are affected by the new way of allocating overseas military, the adjustment for a potential error of closure, or both:

- New York previously had been expected to lose 3 seats. Under PRB's new projections, it could lose 4.
- Connecticut, previously expected to stand pat, could lose 1 seat.
- Minnesota, previously expected to stand pat, could lose 1 seat.
- Wisconsin, previously expected to stand pat, could lose 1 seat.
- Georgia, previously expected to gain 1 seat, could gain 2.
- Arizona, previously expected to gain 1 seat, could gain 2.
- Florida, previously expected to gain 3 seats, could gain 5.

In summary, four states in the Northeast and Midwest are likely to lose a seat compared to earlier forecasts. And three Sunbelt states are likely to gain more than expected.

The unusually large error of closure in 1980 was probably due to heavy illegal immigration during the 1970s, reduction in the undercount of minorities, and some overcounting due or partly due to dual home ownership.

Every census is different, and the factors above may end up influencing the final 1990 count to a lesser (or greater) degree than posited here. Similarly, the census results, to be released January 1, 1991, may hold surprises in as-yet unanticipated ways.

–B.O'H. and C.H.

TAKE A NUMBER

European potpourri: The new, 1989 edition of the Council of Europe's *Recent Demographic Developments in the Member States* contains some interesting insights into trends and attitudes relating to population growth in Europe.

Low fertility is generally viewed with some concern. The report notes that Finland's population is projected to sink below 5 million in 1999 so that "Finland will be a 5 million nation for 13 years only." Finland also reports that 78 percent of households live in "well-equipped dwellings" (running water, central or electrical heat, hot water, bathing facilities), and 22 percent do not.

In Belgium, about 88 percent of 1978 marriages were still intact after 10 years–a high percentage, but the 1960 cohort's record was much better, about 96 percent. Immigration to the United Kingdom has dropped sharply, down to a net influx of 2,000 in 1987 from 59,000 in 1985. In the Netherlands, concern over the low birth rate caused the Interministerial Committee on Population to call for a policy that allows both men and women to work while at the same time deterring measures that "adversely affect perceptions of the value of parenthood and the associated financial burden."

Sweden attributes its recent (1988) birth rate rise to closer birth spacing and points out that the rise is not assumed to continue in the latest series of population projections. (However, the crude birth rate *did* continue to rise through the end of 1989.) France states flatly that its family assistance programs follow a demographic policy to ensure the replacement of the population. Some worry is expressed over the below-replacement total fertility rate (TFR) of 1.8 average lifetime births per woman, but this rate, the report notes with some satisfaction, is only a little below the two-child family.

In Belgium, considerable attention is being paid to the federalization of the state into more autonomous Walloon and Flemish areas and to the emancipation of women. Regarding abortion, which is generally prohibited by law, consideration is being given to replace present criminal penalties with more positive policy measures, presumably to put some upward pressure on the very low Belgian birth rate (a TFR of 1.5).

–C.H.

ADDENDA

Signs of the Aging of America–Part IX

You know the U.S. population is getting a little long in the tooth when magazines hit the stands that glory in running *old* news (isn't that a contradiction in terms?) from Your Day–and furthermore, you read them. The neo *Saturday Evening Post*, for example, and *Memories* magazine (shown at right).

INAUGURAL ISSUE
Memories
1949
NOTORIOUS!
Ingrid Bergman's
Fall From Grace

CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005

THE POPULATION EXPLOSION, by Paul and Anne Ehrlich. New York: Simon and Schuster, 1990. 320 pages. $18.45 hardback. ISBN 0-671-68984-3.

"Why Isn't Everyone as Scared as We Are?" If the reader has any doubts about the Ehrlichs' position on rapid population growth, the title of the opening chapter will certainly dispel them. *The Population Explosion* is a sequel to the landmark publication in 1968 of Paul Ehrlich's *The Population Bomb*—the one that started it all.

This book continues the earlier warning on the dangers of excess, both in terms of too much consumption and too many people. As such, it fits easily into the sudden resurgence of interest in the environment in 1990 and, in fact, came out about the time of this year's Earth Day remembrance.

But there is a difference this time, say the Ehrlichs. The bomb of the 1960s has "detonated" and (to switch metaphors) some of the bills are starting to come due. Recent declines in world grain production remind us that many of the world's people live on a precarious margin, they say; as growing populations spread into rain forests, some of the concerns of the 1960s become the realities of the 1990s.

The Ehrlichs are very clear on their point of view. While many readers may not agree with all of their assessments—is the birth of an American baby really a disaster "hundreds" of times worse than a birth in a developing country?—but there is much thought-provoking material in this book. Not all of the arguments are negative. More rational policies could easily improve the world food outlook, the authors point out.

The Ehrlichs conclude with a section on "What You Can Do," suggesting such activities as writing to legislators or becoming actively involved in politics oneself. Whether one accepts the Ehrlichs' arguments or not, *The Population Explosion* sets a tone that is more and more likely to reflect the present and future mood in the public arena.

—Carl Haub

UNDERSTANDING THE GENDER GAP: An Economic History of American Women, by Claudia Goldin. New York and Oxford, England: Oxford University Press, 1990. 287 pages. $29.95 hardback. ISBN 0-19-505077-0.

In the preface of this remarkably thorough history and analysis of U.S. women in the workplace, the author notes that many believe that the numbers and proportions of women working outside the home is unique to the present day. The percentage of women at work has just exceeded 60 percent, nearly 50 percent of all workers are women and more than 50 percent of women with newborns are back at work within one year. The range of occupations women now occupy is also impressive: The sign "Men at Work" seems jarringly out of date.

Yet from the middle of the 19th century, Claudia Goldin writes, each generation of women has experienced significant change in entering the labor place. At the turn of the century, young women moved from manufacturing to office jobs, a significant improvement at the time but ultimately a role that has confined and limited many women. Goldin explores not only these feminized occupational "assignments" but the wage gaps between men and women—clearly closing, but very slowly. What are the reasons that certain jobs seem reserved for women and that men are paid more, even in similar occupations? She provides a useful framework to understand the difference in pay and argues from the data that much—but not all—of the gap is due to wage discrimination.

—Elaine Murphy

BLACK AMERICANS: A Statistical Sourcebook 1990 Edition, edited by Alfred N. Garwood. Boulder, Colo.: Numbers & Concepts, 1990. 340 pages. $47.50 hardback; $39.95 paper. ISBN 0-929960-02-5; ISBN 0-929960-03-3.

This thick 5½ by 7½ inch reference book is a compilation of federal statistics on black Americans. Most of the statistics are available in other published sources, but it is helpful to have them in one place, from percentage of black babies born weighing under 2,500 grams to the number of Ph.D.s in mathematics conferred on blacks.

By and large the information is understandable and easy to locate, and the volume constitutes a useful collection of data for anyone interested in black America. Except for a short introduction, a statistical glossary, and a useful index, the book is—no more and no less—a compendium of 174 data tables, divided among eight chapters. The first chapter contains information on demographics and characteristics of the black population such as marital status, age and educational attainment. Chapter 2 has 38 tables on vital statistics and health measures.

Other chapters present data on education, including figures on enrollment, teachers, attainment, and test scores; black elected officials and the black electorate; information on crime, law enforcement, and corrections; statistics on the labor force, employment and unemployment; earnings, income, poverty, and wealth; and four miscellaneous economic tables.

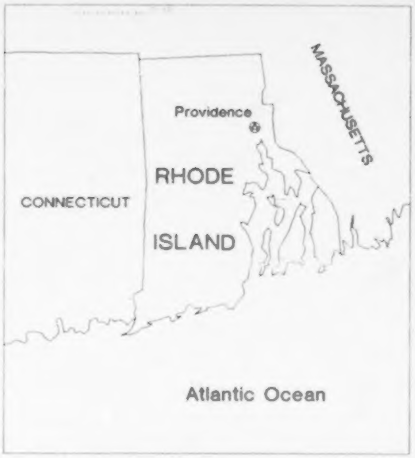
—William P. O'Hare

SPOTLIGHT

RHODE ISLAND

Population (1990 est.): 998,000
Population rank: 43rd in nation
Land area: 1,049 sq. miles
Population density (1989): 951 per sq. mile
Percent urban (1980): 87 percent
Births per 1,000 pop.: 14.2
Deaths per 1,000 pop.: 9.8
Rate of natural increase: 0.4 percent
Infant mortality rate: 8.4 infant deaths per 1,000 live births
GNP per capita (1987): $15,555
Capital: Providence

by Chester E. Smolski
and Leon Yacher



With the Atlantic bordering on the south and the 28-mile long Narragansett Bay splitting the state along a north-south axis, Rhode Island is nicknamed the "Ocean State." Its early settlement in 1636 and important sea trade thereafter made Newport and Providence the seventh and eighth largest cities in the country as of the 1790 Census. The cities are no longer so nationally preeminent, but the state remains heavily populated and ranks behind New Jersey as the second most densely settled state in the nation.

The 410-mile shoreline consists of sandy beaches, rocky outcroppings, marshes, and developed features such as marinas, boatyards, and seafood-processing plants. The beaches and historic maritime ambience contribute to the state's economically important tourist trade.

Open land and woodland constitute 52 percent of the state, and the potential for agriculture would seem promising. Yet out of a labor force of 470,000, only 850 persons are engaged in producing crops and livestock. Approximately equal numbers work in manufacturing and service industries, as the manufacturing-to-service shift experienced in other states has had its effect even in this hardcore industrial state (where costume jewelry and silverware, among other products, have long been manufactured). The ocean-based tourist trade is considered the state's third largest "industry."

Rhode Island's low population growth rates in recent decades stem from a low birth rate and a higher death rate than the national averages of 15.7 and 8.7, as of 1987. This is partly the result of an older population. The median age of 33.4 years in 1987 made Rhode Island the sixth-oldest state, and second-most senior state (tied with Pennsylvania) with 14.6 percent of the population 65 years and older. Florida, with 17.7 percent, is first in this category.

From 1970 to 1980, Rhode Island was one of two states (New York being the other) that actually lost population, a rare event in a country where booming state growth is considered standard. The shrinkage of Rhode Island's population by 3,000 over the decade is attributable to a federal decision to remove naval facilities from Newport, R.I., to Norfolk, Va. It has been estimated that if the transfer had not occurred, the state would have grown by 4 percent during that 1970s—an example of the power of big policy decisions on small areas.

Population growth achieved levels near the national average during the 1980s. A median house price of $49,500 in 1980 (lower than the national average) served to attract new residents from surrounding states in the early part of the decade, but increased demand pushed the median to $128,000 in 1989. The Providence metro area in the mid-1980s experienced mushrooming growth in housing prices, and today is the 12th most expensive house market in the nation.

Some 87 percent of Rhode Islanders live in a metro area. Rhode Island's five counties, much like the other counties of New England, provide no governmental function except for the courts. Local government and public land are instead divided among the 39 cities and towns. The capital, Providence, is the largest city, with 16 percent of the state's population. The Providence metro area (which includes parts of Massachusetts) is the 34th largest in the nation, with 1.1 million residents.

Local population estimates for cities and towns suggest that five of the eight cities and one of the 31 towns have lost population, but population loss in Providence is denied by city officials because of an influx of Asian and Hispanic immigrants during the 1980s. The Census Bureau projects that Rhode Island will reach 1 million in population in 1990.

Chester E. Smolski is Professor of Geography and Director of Urban Studies, Rhode Island College; Leon Yacher is Associate Professor of Geography, Southern Connecticut State University, New Haven.

RP750-1

POPULATION TODAY

Vol. 18, No. 10 October 1990

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5 million lower, in fact; but changes are likely, and the final totals won't be released until December 31

4 **Mexico's preliminary census totals are far below estimates**
81.1 million population reported for March 1990; analysis and adjustment seem likely

4 **To friends of PRB**
A dinner invitation

5 **Haiti's contraceptive prevalence rises from rock bottom**
Contraceptive use put at 10 percent as of 1989

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And for applicants to the Internship Program for Summer 1991

9 **World Population: Fundamentals of Growth puts growth in perspective**
Ideal for teaching and learning, PRB's latest classroom chartbook is replete with text, charts, and graphs

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United Nations

Mexico's census count seems low. (See page 4.)

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FROM THE EDITOR'S DESK

Census dispatches from around the world have filled *Population Today* in recent months. In the very issue of *PT* you're holding are reports from the census fronts in the United States, Viet Nam, and Mexico.

Years that end in zero always portend a bumper harvest of censuses. Sixty-three headcounts are scheduled to be completed during 1990, including those for the United States and China. Forty-three more are due in 1991. By the end of 1991, nine of the world's 10 most populous countries, containing 57 percent of the world's population, will have conducted enumerations within a two-year time span. The 10th, the USSR, held its latest census in January 1989.

Conducting a census usually takes mere days (not counting the years of preparation). Compiling and releasing the data takes months or even years. But ultimately, the tallies become part of general knowledge, most conspicuously in the UN's *Demographic Yearbook* (see page 11) as well as other data compilations, including PRB's *World Population Data Sheet.*

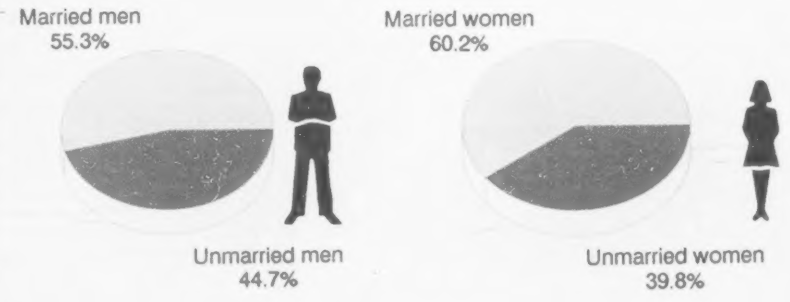
Some population censuses are conducted every five years (as in Canada, Japan, South Korea, and Sweden). In a very few countries (such as Iceland), censuses have been supplanted by universal registers. But most countries conduct full headcounts every 10 years or so; in fact, in the last decade some 189 countries have conducted a census.

The countries know that censuses are essential to capture demographic data for small geographic areas, calibrate population benchmarks, hone the accuracy of past and future projections and estimates—and ultimately, after adding all the figures, ascertain where world trends are headed.

—Art Haupt

SPEAKING GRAPHICALLY

U.S. Singles Capital: New York City



New York, besides being the nation's most populous city, is also the city with the largest number of unmarried males and females age 25-34 years, based on 1980 Census data (the latest data available). Of the city's 717,130 men in this age group, 44.7 percent, or 320,405, are unmarried; of the 792,361 women in the same age group, 39.8 percent, or 315,144, are unmarried. *—A. deS.*

Source. U.S. Bureau of the Census, *1980 Census of Population*, PC80-1-D34, Table 205.

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Recycled Paper

Preliminary Totals Cause Census Stir

The 1990 Census has been many things: the most automated, the most elaborate, and surely one of the most controversial. But there is one thing it isn't—over.

Not even now. Not even after the release, in late August, of preliminary counts—closely followed by a momentary media maelstrom, for many of the figures for states, cities, and other jurisdictions are were lower than expected. (See *Take a Number,* page 10, for the Census Bureau's preliminary 1990 state numbers compared to PRB's projections based on precensal estimates.)

"Census Estimates for Mass. Defy '88 Forecasts," headlined the *Boston Globe.* "Census Numbers Disputed," said the *Philadelphia Inquirer,* and *USA Today* complained "Census Count Isn't Up to Projections." Politicians, never the masters of understatement, immediately jumped into the fray. Rep. Tom Sawyer (D–Ohio) worried aloud that the national count would end up 5 million short. Mayor David Dinkins of New York called the count of his city "unadulterated nonsense."

Not exactly what the Census Bureau needed following last spring's flap over an initially lower-than-hoped-for rate of return of census forms.

To be sure, the 245.8 million preliminary total is less than expected. But preliminary numbers, as the name implies, are not final counts. Those final numbers will not be ready until December 31, 1990, for states and later still for smaller areas. The preliminary counts are, rather, data sent to the states for local review, a procedure that is an integral part of the census process itself.

During local review, jurisdictions such as cities and counties have a chance to look over the figures for errors such as omitted blocks, apartment houses, neighborhoods, and so forth. In this way, local officials who are most likely to discover omissions assist the Bureau in its goal of the most complete coverage possible.

U.S. CENSUS
ENUMER

April's headcount was only the beginning.

It is impossible to estimate exactly how many more people will or won't be added to the preliminary census counts before they become final. But William O'Hare, PRB's director of policy studies, has identified seven factors that are likely to increase the final national total by 1 million or more:

1. Computerized imputation has not yet been performed. This procedure accounts for housing units where it is unclear whether or not there are occupants, or how many there are. In 1980, imputation resulted in the addition of about 760,000 people to census figures.
2. The preliminary data reflect only information collected through early August 1990. People who have been identified since that point will be included in the final figures.
3. Local-review challenges will result in some changes. Local jurisdictions have 15 working days to challenge census figures and provide evidence of missed housing units. Numerous challenges are expected. In all but three states, the preliminary figures are lower than expected as compared to recent estimates. In most major cities the figures are also lower than expected.
4. The Census Bureau's "Were You Counted?" campaign is slated to continue into late September or early October. This campaign, which aims to encourage people not already enumerated to come forward, is likely to count some additional people.
5. An internal Census Bureau count review may result in some changes. Regardless of challenges made during the local review process, the Bureau itself conducts extensive reviews of its figures and sends out enumerators to check areas where people may have been missed.
6. The count of people living in "split blocks" (blocks that are split between two political jurisdictions) have not yet been included in either jurisdiction's figures—that will come later—although they have been included in tallies organized by higher levels of geography.
7. Data from military personnel on ships at sea have not been fully processed. These people will be included in the count of their home ports.

Furthermore, military overseas and their dependents are not part of preliminary numbers. This separate group of about 1 million will be added to the final figures, but only for purposes of reapportionment.

In short, the figures may change nationally, and/or at the state level, and/or locally. And as they change, so may the distribution of seats in the House of Representatives.

This distribution is not yet cast in stone. Based on the preliminary counts, Wisconsin appears to have held on to its ninth seat, one that prior to the census seemed to be in jeopardy. But several other states are still in suspense. If, say, New York succeeds in adding more people to its preliminary count, those states on the verge of gaining or losing a seat could be tipped over the edge. And this could come as a nasty shock (or pleasant surprise) to those who thought the dramatic reallocations of seats they saw in their late-summer newspapers were final.

–C.H.

First Clues to the Mexican Census Mystery

Early reports of Mexico's 1990 Census give a population count for the nation that is unexpectedly low.

The population figure released by INEGI (National Institute of Statistics, Geography, and Information), is 81,140,923, as of Census Day, March 12, 1990. This preliminary national total is several million people short of precensual projections.

Most estimates for Mexico in 1990 (including PRB's *World Population Data Sheet*) had pegged Mexico as having over 88 million people. If the present figure were to prevail, Mexico, although still the world's 11th most populous country, would have less than a 2-million person lead over the new, unified Germany.

It must be emphasized that these figures are preliminary, and that by the very nature of the census tabulation process, such figures will differ somewhat from final ones. The previous Mexican census count–in 1980–was also considered somewhat low, and retroactive statistical adjustments were made. Nonetheless, for a census to be 8 or 9 percent lower than expected, in a country that is considered to have an acceptable statistical infrastructure, is cause for some head-scratching in the demographic community.

In addition, the figures released for Mexico City show the total metro area as having 15 million people–a figure that is 5 million smaller than generally expected and only half a million higher than that of 1980.

In the absence of final, definitive numbers, or detailed data for small geographic areas, demographers are cautious about commenting on these numbers. But the potential factors behind such a low count make an absorbing (and so far unsolved) missing-persons detective story.

The 1980 Census was troubled by underenumeration. Its original official total was 66.8 million, but with statistical hindsight the UN Population Division, in its latest assessment, now pegs the 1980 population at 70.4 million. In any event, the 1980 benchmark is not confidence-inspiring.

The 1990 Census operation is reported to have been much more successful. But one change in census procedure in 1990 may have affected the figures: Mexico's censuses are conducted by door-to-door enumerators. Previously, each census was conducted on a single Sunday, but in 1990 for the first time the enumeration was stretched over five days. Households where an adult respondent was not available were left an instruction card asking respondents to go to the enumerator's address and be debriefed. Not all respondents may have complied.

Other possible causes may include:

Lower fertility. Mexico's fertility may be lower than expected, due to, among other factors, higher than expected contraceptive prevalence.

Some 45 percent of Mexican women of reproductive age in union were using contraception as of 1987. It can be argued that Mexico's contraception figures plausibly should be closer to Brazil's and Colombia's. These two countries, which have social and economic similarities to Mexico, showed mid-1980s contraceptive prevalence rates that were much greater–in the 60-percent range.

Higher mortality. Higher than expected mortality might account for the lower population, if the age structure turns out to be older, or if statistics show a less rapid decline in the infant mortality rate or higher age-specific mortality rates than expected, or the effects of disease.

Emigration. The significant number of Mexico's residents who have migrated to the United States or other countries during the decade may conceivably account for some of the shortfall. Some 81.3 percent of undocumented aliens applying for amnesty under the 1986 Immigration Reform and Control Act were from Mexico. Whether they are the tip of an emigration iceberg is another question.

No date has been set for the release of final, more detailed census results. But when they appear, they will include age-specific data, and any anomalies in age-structure could be the key to the mystery.

Fewer people in the working ages would suggest emigration as the reason for any lower-than-expected national total. Fewer children than projected in the earliest ages would suggest lower fertility. Fewer-than-projected children in general might suggest underreporting by respondents.

Mexico experiences an estimated 2.7 million births per year and 0.5 million deaths, for a natural increase of 2.2 million, or nearly 200,000 per month. The total fertility rate (TFR) is an average of 3.8 total lifetime children per woman. The family planning campaign that began in earnest in the 1970s, when the TFR was 6.2, has been successful in reaching the grassroots level.

The United States, a country with about three times Mexico's population, experiences about 4 million births per year and 2.2 million deaths. The disparity in deaths between the two countries (2.2 million versus 0.5 million) is principally due to the United States's older age structure.

–A.H.

An Invitation to PRB's Awards Dinner

The Board of Trustees and the staff of the Population Reference Bureau, Inc., cordially invite you to celebrate PRB's 61st anniversary at the 1990 Annual Awards Dinner recognizing outstanding contributions in the field of demography.

The dinner speaker will be W. Parker Mauldin, Program Associate, the Rockefeller Foundation.

Date: Thursday, November 1, 1990

Time: Cocktails (cash bar) 6:30 pm
Dinner and Awards Ceremony 7:15 pm

Place: National Press Club
Washington, D.C.

Awards Dinner tickets are $40 each. Send check to Population Reference Bureau, Attn.: Colette Thomas, 777 14th St., N.W., Suite 800, Washington, D.C. 20005. Checks payable to PRB.

SURVEY REPORT

Haiti

Haiti, with a population of 6.5 million, has the lowest contraceptive prevalence rate of any Caribbean country. The 1977 Fertility Survey in Haiti found that 14 percent of women in union were using some method of contraception and 5 percent were using a modern method. Surprisingly, later surveys reported that use had declined from even these minimal levels. The Contraceptive Prevalence Survey of 1983 recorded a rate of 7 percent overall and 4 percent for modern methods. The 1987 Morbidity, Mortality, and Utilization of Health Services Survey found similarly low levels.

Although these surveys provided a great deal of information about family planning and fertility in Haiti, they also raised several questions. Consequently, in 1989 the Haiti National Contraceptive Prevalence Survey (NCPS) was conducted. The Child Health Institute, with funding from USAID and IPPF, and technical support from the Division of Reproductive Health of the Centers for Disease Control, administered the survey.

In addition to gathering data to document trends in fertility and health, the survey had specific goals. By including male respondents, the survey endeavored to:

- explain the discrepancy between the number of contraceptives (especially condoms) reportedly distributed and the number used.
- obtain data on fertility, contraceptive use and sources of supply, method mix, and unplanned pregnancies.
- investigate barriers to use of contraception.
- examine male roles in family planning.

UNICEF

More Haitian women now use contraceptives.

The Preliminary Report of the 1989 survey found that use of family planning in Haiti among women in union has risen to 10 percent; use of traditional methods is less than 1 percent. The most commonly used method is the pill (4 percent of all women in union), followed by female sterilization (2.5 percent) and the injection (1.6 percent). Less than 1 percent of women in union report the use of condoms.

Among men in union, the proportion using family planning is 11 percent, with condoms being the most widely used method (3.4 percent of men in union). The report speculates that women may underreport condom use because they consider it a male method or because they use it as a back-up method for another "female" method which they do report. Men in union may also be reporting use of condoms with partners outside of their current union. Among all men, use of family planning is 8.5 percent, with 6 percent of single men, mostly in the urban areas, reporting condom use.

The 1989 NCPS asked condom-users their reasons for using the method. The majority of men in union (62 percent) say they use condoms to prevent pregnancy, but 13 percent use the method for protection against sexually transmitted disease, including AIDS, and another 20 percent give both reasons. Among single male users, disease prevention is the primary reason given for using condoms (34 percent). About three-quarters of male condom-users report that they use the method every time they have sexual intercourse. Although these figures indicate that some men are making an effort to protect themselves and their partners from pregnancy and/or diseases, in a country where HIV infection is high, the many nonusers of barrier methods remain at risk.

Among men and women in union not currently using family planning, about two-thirds give reasons related to pregnancy, infertility, or sexual activity. Thirty-seven percent of all the nonusing women are breastfeeding or pregnant, and another 10 percent would like to become pregnant. Another 18 percent are not sexually active or believe they are menopausal.

Almost twice as great a proportion of men as women say they desire a pregnancy (18 percent), while 16 percent of men believe their partner is menopausal (this could be true as men 15-59 and women 15-49 years were interviewed; the men could have older partners). Nine percent of women in union say they do not know of any method, while 7 percent of men in union gave this reason for nonuse.

Among women who gave birth in the five years before the survey, more than two-thirds received at least one prenatal care visit; 22 percent had more than six visits. Of these recent births, mothers reported that three in 10 were not planned.

Answers to many other questions posed by the survey await publication of the final survey report. It is evident, however, that information gathered by interviewing men as well as women allows for comparisons that can help illuminate possible barriers to use of family planning.

—B.C.S.

First Results Of Viet Nam's 1989 Census

by Terence H. Hull

Reunited Viet Nam carried out a census in 1979, but the results were not distributed widely. The tabulated materials[1] that were published did not include some information considered standard on a modern census, such as marriage and fertility data, residence-related information, and patterns of recent migration. As a result, the 1979 enumeration was used relatively little for demographic analysis.

To correct these difficulties the Government of Viet Nam, with assistance from the UN Population Fund, ESCAP (Economic and Social Commission for Asia and the Pacific), and the Australian Bureau of Statistics, designed the 1989 Census to give a full and accurate picture of demographic trends in the nation.

The enumeration was conducted in three sections. First, a full enumeration was undertaken of all civilians considered to be usually resident in the country as of midnight March 31-April 1, 1989. A six-month cutoff was used to define the concept of "usual" residence. The types of questions asked in the full enumeration included:

1. Name
2. Relationship to head of household
3. Sex
4. Date of birth
5. Ethnic group
6. Internal migration
7. Literacy
8. Education
9. Qualifications
10. Marital status
11. Usual activity
12. Occupation
13. Industry

The second section was a sample census of 5 percent of the total civilian population, using the same questions as the full enumeration, but with questions for women of childbearing age:

14. Children ever born
15. Children still living
16. Date of last birth
17. Deaths in the household since the Tet holiday 1988

These questions are used to estimate levels of fertility and mortality. Additionally, some questions on housing were asked to people in the 5-percent sample. This sample enumeration covered approximately 3 million people out of the total civilian population of 63.4 million.

The third part of the census was the collection of data on all members of the so-called Special Enumeration Group, which included members of the military, diplomatic corps, and workers sent overseas. This group was asked the same questions as the full enumeration. Just over 1 million people were in the Special Enumeration Group, making the overall total population of Viet Nam 64.4 million.

Table 1. Viet Nam's Estimated Total Fertility Rates, 1970s to 1989

Reference period for estimate	TFR	Estimation method
Results from 1979 Population Census		
Total 1970-1974	6.03	Rele
Total 1975-1979	4.85	Rele
Results from 1989 Population Census		
Total 1980-1984	4.69	Rele
Urban	3.42	Rele
Rural	5.13	Rele
Total 1985-1989	4.22	Rele
Urban	2.80	Rele
Rural	4.63	Rele
Total 1988-1989	3.93	P/F
Urban	2.51	P/F
Rural	4.39	P/F

Notes. TFR = total fertility rate: the average number of lifetime children per woman based on current age-specific fertility rates. Calculations made using the Easwespop Fertility Estimate Program of the East-West Population Institute.

Rele = Rele Child to Woman Ratio Method, calculated from the age-sex structures reported in the 1979 and 1989 Census reports.

P/F = Parity/Fertility Pattern Method calculated from data on children ever born, and children born in the last year reported in the 1989 Census report.

Preliminary Results

The first census results were published in March 1990, in a report of 74 pages, with appendices containing 15 tables and Vietnamese and English versions of the questionnaire. Titled "Sample Results," the report covers the full questionnaire results from the 5-percent sample households, and, for the national tables, the returns from the Special Enumeration Group.[2] The authors warn that the sample results are still subject to some adjustment to ensure that returns from each province contribute the correct weight to the national results—that is, the General Statistical Office needs to check the results against the original sample frame to ensure the findings are representative. Nonetheless, the tables are unlikely to be adjusted significantly, and for most variables the final reports will be based on the full enumeration currently being processed.

The tables in the preliminary report provide sufficient data to make indirect estimates of fertility and mortality levels, and analysis of the first available national data on marriage patterns in Viet Nam. The remainder of this article will review these findings.

Trends in Fertility Decline

Indirect estimates of total fertility rates (TFR) derived from the 1979 and 1989 Censuses are presented in Table 1. They are called indirect because they are not based on registration statistics or even directly on questions about the number and timing of births, but rather are calculated from reports of the ratio of children to women of childbearing age, or the date of women's last birth. The trends implied by these

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Table 2. Trends in the Marital Status Indexes[a] of Women in Indonesia, 1971-1985, and Viet Nam, 1988-1989

Indonesia Marital status	Year of estimate 1971	 1980	 1985	 1987
Singulate mean age at marriage	19.28	20.03	21.1	–
Single	.157	.205	.241	.259
Currently married	.739	.723	.701	.694
Widowed	.058	.062	.021	.018
Divorced	.046	.046	.038	.030

Viet Nam Marital status	Year of estimate 1988	 1989
Singulate mean age at marriage	–	23.22
Single	.342	.334
Currently married	.634	.628
Widowed	.015	.020
Divorced	.009	.010
Separated	.021	.009

[a] Weighted according to the Hutterite "Natural Fertility Pattern," thus giving greatest emphasis to the experience of women in the peak fecundity ages 20-39.

calculations are reasonable, with an apparent even decline in fertility from 6 to 4 lifetime children per woman on average from the early 1970s to the time of the 1989 Census. This is also the period of rapid development of Viet Nam's family planning program.

Confirmation for this result can be found in the analysis of the 1988 Demographic Survey of Viet Nam, reported by Nhan and Hanenberg.[3] According to this nationally representative survey, the TFR for the nation fell from 4.6 average children per woman in 1977 to 3.7 in 1987. Because of the methodology used in that survey, the authors caution against putting too much faith in the fertility estimates for single years, but contend that the "total fertility rate was at least 4.1 in 1985-1987," which is quite in line with the census estimate of 4.2 for 1985-1989.

The sample results do not provide any provincial level data that can be used to calculate regional variations of fertility, but Figure 1 shows the TFR levels of each province. Here it can be seen that the areas with the lowest fertility are the densely populated delta regions around Hanoi and Ho Chi Minh City. In the rest of the country, fertility is at least 20 percent higher than the national average. When final census results are available, it will be possible to calculate fertility levels in a variety of ways for each province and thus obtain a better picture of the national impact of social changes and the family planning program.

For many years, analysis of demographic and social trends in Viet Nam have been hampered by lack of information on marriage patterns. This information is useful not only in monitoring factors responsible for fertility levels, but also reflects changes in the roles of women and trends in household formation and dissolution. The 1989 Census marital status data will be a very useful addition to the analytical resources of economists and sociologists.

Marital Status

Comparison of marriage patterns of Viet Nam with those of Indonesia reveals a somewhat higher singulate mean age at marriage (SMAM) and relatively lower rates of divorce and widowhood in Viet Nam than in its more populous Asian neighbor (see Table 2). In a partial analysis of marriage data from the 1988 Demographic Survey, Nhan and Hanenberg find a SMAM of 22.4 in the north and 24.6 in the south, which is perfectly in line with the census results.

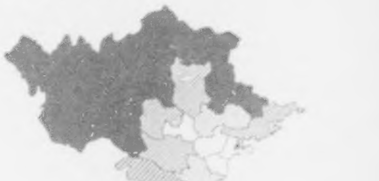
They contend that the higher age at marriage of southern women resulted from a dearth of males following the war. But confirmation of this hypothesis must await the full data on age structure by region and more detail on the prevalence of widowhood and divorce. For the time being, it is worth noting that the proportion of women of childbearing age who are widowed is actually lower in Viet Nam than it is in Indonesia. This may be caused by a faster rate of remarriage in Viet Nam.

Infant and Child Mortality

Mortality data are notoriously difficult to collect. In most developing countries, analysts are forced to use estimation methods that rely heavily on assumptions that may not be valid for the country under investigation. Added

Continued on next page

Figure 1. Total Fertility in Viet Nam by Region, 1989



Source. 1989 Population Census of Viet Nam.

Demographer's Page

Continued from previous page

to this is the problem of having to work from small samples. It is little wonder demographers throw up their hands when confronted with questions about current levels and trends of mortality.

Nonetheless, mortality measures are important because they reflect the welfare of the society and in particular progress in the provision of adequate nutrition and health care. The trick is in knowing whether apparent changes in the estimates are real or merely products of the method of measurement.

The 1989 Census data, when processed using the UN Population Division's demographic software *Mortpak Lite,* yield an estimated infant mortality of 44 deaths to infants under 1 year of age for every 1,000 live births (see Table 3). By comparison, the 1988 Demographic Survey produced an estimate of 37 deaths per 1,000 live births for the period 1984-1986. The latter estimate is based on a much smaller sample, and on a different method of estimation and was regarded as suspect by the survey's authors (see Nhan and Hanenberg, endnote 3).

Table 3. Viet Nam's Infant and Child Mortality Rates, 1989

Region	Infant mortality[a]	Child mortality[b]	Life expectancy at birth
Total	44	13	63.3
Urban	31	7	68.1
Rural	47	15	62.5

[a] Infant deaths (under age 1) per 1,000 live births.

[b] Deaths age 1-5 per 1,000 survivors who reached age 1.

Source. Calculated from 1989 Census Preliminary Report.

The census results presently suggest that previous claims of infant mortality rates under 40 were perhaps premature. Nonetheless, Viet Nam's mortality levels are lower than those of many other Asian countries, including Indonesia and the Philippines, and suggest that the national primary health care program described in Worth,[4] Vu Can,[5] and the pamphlet on public health in Viet Nam[6] may indeed have been effective in reducing mortality in a very poor country.

In line with the relatively low infant mortality rates, Viet Nam has low child mortality and an expectation of life at birth of over 60 years. Estimates for regions and provinces will be produced following the publication of later census results.

Conclusion

The 1989 Viet Nam Population Census represents a major contribution to our understanding of social and demographic change in the second largest country of Southeast Asia. It reflects some of the legacies of war and extended economic disruption, but it also indicates that government policies to reduce fertility and mortality are showing signs of success. The preliminary results are enough to make analysts await future publications with a heightened sense of anticipation.

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4. Dooley Worth. "Health as a Political Decision: Primary Health Care in the Democratic Republic of Viet Nam." Ph.D. dissertation for the Graduate Faculty of Political and Social Science, New School for Social Research, 1984.
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6. *Public Health in the Democratic Republic of Viet Nam.* Hanoi: Medical Edition, 1965.

Call for PRB Scholars and Interns

Visiting Scholar Award:
Applications are invited for the PRB Visiting Scholar Award for the nine-month period beginning September 1991.

The recipient of the award, made available under a grant from the Andrew W. Mellon Foundation, will spend at least nine months at PRB's Washington, D.C., offices conducting a population-related project of either domestic or international focus. Priority will be given to policy-oriented projects that attempt to synthesize work on a particular topic (including the scholar's own contribution).

The negotiable stipend is comparable with academic salaries and includes transportation costs. Applicants are requested to submit a brief estimate of transportation and salary requirements; applications combining the award with sabbatical leave are encouraged.

Closing date for applications is January 15, 1991. Interested individuals should forward a brief description of their planned activities, curriculum vitae, and a sample of recent publications to the address below.

Interns for Summer 1991:
Applications are invited for the PRB Internship Program for Summer 1991.

Open to both undergraduate and graduate students, PRB internships enable persons with a strong interest in population to assist professional demographers working on national and international issues. Some population-related work is useful but not a prerequisite. Interns usually work 35 hours a week and receive a stipend of $8.00 per hour.

Closing date for applications is February 1, 1991. Interested individuals should forward a letter of application to the address below, describing completed academic studies, future academic plans, population interests, and any additional information supporting their candidacy. Three letters of recommendation from instructors should be sent separately.

Contact:
Dr. William O'Hare
Population Reference
Bureau, Inc.
777 14th St., N.W., Suite 800
Washington, D.C. 20005
phone (202) 639-8040

Chartbook Explains World Growth

Studying population growth is made easy in PRB's new chartbook, a 32-page text booklet that explains the dynamics of, and prospects for, the world's 5.2 billion people.

A publication of PRB's Population Education Department, *World Population: Fundamentals of Growth* (2nd edition), the chartbook is written for a classroom setting (seventh grade through college). Incorporating the latest available statistics, the chartbook covers:

- World population growth and distribution through history
- The dynamics of natural increase
- The effect of migration
- Population composition
- Population momentum
- Patterns of world urbanization
- World health

The chartbook is illustrated by eight large charts and nine smaller charts. It contains PRB's *1990 World Population Data Sheet* in an 8½ x 11 inch format, plus a glossary and a list of the world's largest urban areas.

An appended study section helps students review the text and analyze the charts. Activities utilizing the Data Sheet are included. Teachers also receive a teaching guide.

The mission of PRB's Population Education Department is to provide teachers with resources that enable them to teach demographic concepts and population issues in such fields as geography, history, global studies, and current events. The department publishes other teaching packages and operates an audiovisual library.

–A.H.

Copies of the 32-page *World Population: Fundamentals of Growth* with an accompanying teacher's guide can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB; or by calling 1-800-877-9881. Visa and MasterCard accepted. Prices are: $5.00 a single copy; 2 or more copies, $4.00 each. Sets of 15 slides are available for $10.00. Orders of $50.00 or less must be prepaid and include $1.00 or 3 percent of total order (whichever is greater) for postage and handling. PRB members receive a 20-percent discount on a single copy.

SOFTWARE

PC Globe 3.0 is the latest version of this atlas-on-a-floppy-disk program for personal computers. It provides instant profiles of 177 countries, in the form of maps, charts, and data tables.

Many social and economic measures are available for each country. The program's demographic data include such measures as national population size for various periods, population age-sex pyramids, and growth rates. Comparisons between countries can be put in bar-chart form, and some population measures can be displayed on maps. Data or comparisons generated in *PC Globe* can be exported to *Ventura Publisher, WordPerfect,* and *Lotus 1-2-3,* and screens captured and saved in the PCX format.

The program is useful both for the classroom and as a reference. It runs on IBM PCs or compatibles with floppy drive or hard disk and 512K of memory. Hercules, CGA, EGA, or VGA displays are supported. (*PC Nations,* a companion program available from the same vendor, displays national flags and plays national anthems for 175 countries.)

PC Globe 3.0 is available in English, French, German, and Spanish versions from PC Globe, Inc., 4700 South McClintock, Tempe, Ariz. 85282. Phone: (602) 730-9000. Price: $69.95.

–A.H.

POPULATION UPDATE

Estimated United States Population:

As of June 1, 1990	251,142,000
As of June 1, 1989	248,535,000

The above estimates, the latest available, include armed forces overseas and are from U.S. Bureau of the Census, *Current Population Reports,* Series P-25, No. 1062.

Estimated World Population:

As of October 1990	5,344,000,000
Annual growth	93,000,000

Extrapolation from the mid-1990 population on PRB's *1990 World Population Data Sheet.*

Latest Provisional Statistics for the U.S.: April 1990

	12 months ending with April					
	Number		Rate			
Item	1990	1989	1990	1989	1988	1987
Live births	4,084,000	3,943,000	16.4	16.0	15.7	15.5
Deaths	2,167,000	2,150,000	8.7	8.7	8.9	8.7
Natural increase	1,917,000	1,793,000	7.7	7.3	6.8	6.8
Marriages	2,414,000	2,379,000	9.7	9.6	9.8	10.0
Divorces	1,170,000	1,188,000	4.7	4.8	4.7	4.8
Infant deaths	38,900	38,500	9.6	9.8	10.0	10.3
Population base (in millions)	...	...	249.0	246.3	243.9	241.6

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births.
Source. Monthly Vital Statistics Report (Vol. 39, No. 4) from the National Center for Health Statistics.

TAKE A NUMBER

1990 State Populations: Census Preliminary Results Versus PRB Estimates

Region or state	1980 final count	1990 estimate (PRB)	1990 prelim. results	% change between est. & prelim.	House seats 1980	House seats 1990[a]	Change in House seats 1980-90
UNITED STATES	**226,545,805**	**250,088,000**	**245,837,681**	**-1.7**	**435**	**435**	**0**
NORTHEAST REGION	**49,135,283**	**50,909,000**	**50,033,552**	**-1.7**	**95**	**88**	**-7**
New England	12,348,493	13,108,000	13,025,114	-0.6	24	23	-1
Maine	1,124,660	1,234,000	1,218,053	-1.3	2	2	0
New Hampshire	920,610	1,124,000	1,103,163	-1.8	2	2	0
Vermont	511,456	574,000	560,029	-2.4	1	1	0
Massachusetts	5,737,037	5,930,000	5,928,331	-0.0	11	10	-1
Rhode Island	947,154	1,002,000	988,609	-1.3	2	2	0
Connecticut	3,107,576	3,244,000	3,226,929	-0.5	6	6	0
Middle Atlantic	36,786,790	37,802,000	37,008,438	-2.1	71	65	-6
New York	17,558,072	17,981,000	17,626,586	-2.0	34	31	-3
New Jersey	7,364,823	7,750,000	7,617,418	-1.7	14	13	-1
Pennsylvania	11,863,895	12,072,000	11,764,434	-2.5	23	21	-2
MIDWEST REGION	**58,865,670**	**60,361,000**	**59,223,559**	**-1.9**	**113**	**105**	**-8**
East North Central	41,682,217	42,440,000	41,650,787	-1.9	80	74	-6
Ohio	10,797,630	10,939,000	10,777,514	-1.5	21	19	-2
Indiana	5,490,224	5,619,000	5,498,725	-2.1	10	10	0
Illinois	11,426,518	11,692,000	11,325,247	-3.1	22	20	-2
Michigan	9,262,078	9,298,000	9,179,661	-1.3	18	16	-2
Wisconsin	4,705,767	4,894,000	4,869,640	-0.5	9	9	0
West North Central	17,183,453	17,921,000	17,572,772	-1.9	33	31	-2
Minnesota	4,075,970	4,387,000	4,358,864	-0.6	8	8	0
Iowa	2,913,808	2,848,000	2,766,658	-2.8	6	5	-1
Missouri	4,916,686	5,173,000	5,079,385	-1.8	9	9	0
North Dakota	652,717	655,000	634,223	-3.1	1	1	0
South Dakota	690,768	716,000	693,294	-3.1	1	1	0
Nebraska	1,569,825	1,617,000	1,572,503	-2.8	3	3	0
Kansas	2,363,679	2,526,000	2,467,845	-2.3	5	4	-1
SOUTH	**75,372,362**	**86,192,000**	**84,471,556**	**-2.0**	**142**	**149**	**7**
South Atlantic	36,959,123	43,639,000	42,998,314	-1.5	69	75	6
Delaware	594,338	683,000	658,031	-3.6	1	1	0
Maryland	4,216,975	4,745,000	4,732,934	-0.3	8	8	0
Dist. of Columbia	638,333	597,000	574,844	-3.8	–	–	–
Virginia	5,346,818	6,162,000	6,127,680	-0.6	10	11	1
West Virginia	1,949,644	1,843,000	1,782,958	-3.2	4	3	-1
North Carolina	5,881,766	6,633,000	6,552,927	-1.2	11	12	1
South Carolina	3,121,820	3,547,000	3,407,389	-3.9	6	6	0
Georgia	5,463,105	6,509,000	6,386,948	-1.9	10	11	1
Florida	9,746,324	12,921,000	12,774,603	-1.1	19	23	4
East South Central	14,666,423	15,450,000	15,006,552	-2.9	28	27	-1
Kentucky	3,660,777	3,728,000	3,665,220	-1.7	7	6	-1
Tennessee	4,591,120	4,972,000	4,822,134	-3.0	9	9	0
Alabama	3,893,888	4,129,000	3,984,384	-3.5	7	7	0
Mississippi	2,520,638	2,622,000	2,534,814	-3.3	5	5	0
West South Central	23,746,816	27,102,000	26,466,690	-2.3	45	47	2
Arkansas	2,286,435	2,414,000	2,337,395	-3.2	4	4	0
Louisiana	4,205,900	4,363,000	4,180,831	-4.2	8	7	-1
Oklahoma	3,025,290	3,217,000	3,123,799	-2.9	6	6	0
Texas	14,229,191	17,109,000	16,824,665	-1.7	27	30	3
WEST	**43,172,490**	**52,627,000**	**52,109,014**	**-1.0**	**85**	**93**	**8**
Mountain	11,372,785	13,655,000	13,534,099	-0.9	24	24	0
Montana	786,690	807,000	794,329	-1.5	2	1	-1
Idaho	943,935	1,022,000	1,003,558	-1.8	2	2	0
Wyoming	469,557	471,000	449,905	-4.5	1	1	0
Colorado	2,889,964	3,330,000	3,272,460	-1.7	6	6	0
New Mexico	1,302,894	1,542,000	1,490,381	-3.3	3	3	0
Arizona	2,718,215	3,611,000	3,619,064	0.2	5	6	1
Utah	1,461,037	1,719,000	1,711,117	-0.5	3	3	0
Nevada	800,493	1,154,000	1,193,285	3.4	2	2	0
Pacific	31,799,705	38,972,000	38,574,915	-1.0	61	69	8
Washington	4,132,156	4,843,000	4,826,675	-0.3	8	9	1
Oregon	2,633,105	2,859,000	2,828,214	-1.1	5	5	0
California	23,667,902	29,618,000	29,279,015	-1.1	45	52	7
Alaska	401,851	529,000	545,774	3.3	1	1	0
Hawaii	964,691	1,124,000	1,095,237	-2.6	2	2	0

Sources. U.S. Census Bureau: 1980 final count and 1990 Census preliminary results. PRB: 1990 estimates, based on Census Bureau 1989 estimates.

[a] 1990 seats calculated from 1990 Census preliminary results.

POPULATION POSITIONS

Social Science Research Fellowships in population studies are being offered by the Rockefeller Foundation. This program will enable up to four or five highly qualified persons holding social science doctorates to receive fellowships at developing-country population research and training centers for up to two years.

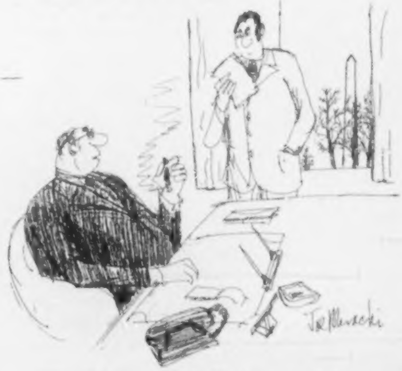
The Fellows' primary function will be to carry out research on population issues in collaboration with the staff of the host institution. A fellow may also be asked to teach a course in his or her field.

The program is designed to expand the number of social scientists with interdisciplinary research experience in international population and development. It is open to citizens and permanent residents of the United States and Canada.

Applications must be received by December 31, 1990. Finalists will be notified in early 1991 for an interview. It is unlikely any fellowships will be awarded before June 1991; some awards may be made as late as November.

For information, contact: Fellowship Office, Rockefeller Foundation, 1133 Avenue of the Americas, New York, N.Y. 10036.

ADDENDA



"That's the gist of what I wanted to say. Now get me some statistics to base it on."

Drawing by Joe Mirachi; © 1977, The New Yorker Magazine, Inc.

CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005

1988 DEMOGRAPHIC YEARBOOK, by the Department of International Economic and Social Affairs, Statistical Office, United Nations. New York: United Nations, 1990. 1,399 pages. $110.00 hardback.

The UN's annual compilation of national population statistics is surely the most essential single reference book on current international population statistics. The title refers to the most recent date for which the enclosed data are available; this latest, 40th edition, which weighs seven pounds, rolled off the presses last summer.

These data are also available from the UN on computer tape for $320, plus $20 for the reel.

Besides the latest vital statistics (relating to birth, death, marriage and divorce) common to all *Demographic Yearbooks,* each edition has a special topic. This year's is "population census statistics." Data are given by sex and age group for many countries, though, needless to say, data are not available from every country on every topic. But if what you require is the most recent, authoritative numbers and vital statistics for 218 countries and areas around the world, the *1988 Demographic Yearbook* is the one book to have.

–Art Haupt

LIFETRENDS: The Future of Baby Boomers and Other Aging Americans, by Jerry Gerber, Janet Wolff, Walter Klores, and Gene Brown. New York: Macmillan, 1990. 271 pages. $18.95 hardback. ISBN 0-02-517291-3.

The 75 million Americans born between the years of 1946-1964, best known as the baby boomers, have had a massive impact on the U.S. life style. Among other effects, says *Lifetrends,* this generation has "altered the American family, created new mass markets, transformed the relationship between men and women, and upended American values."

In the bestseller tradition of *Megatrends* and *Future Shock, Lifetrends* is another trend-auguring book with a buzzword title. It presents an array of statistical facts and goes on to speculate how the boomers may affect the entire nation in upcoming years as their generation grows older and approaches retirement.

The Census Bureau projects that in 2020, 51 million people over the age of 65 will live in America, more than double today's 22.6 million. By that time, say the authors, the baby boomers will constitute an "elderculture" and bring renewed awareness to old age as a highly rewarding and vital part of a person's life.

For example, "virtually every product will be engineered with the older consumer in mind." As the baby boomers age, they will bring new meaning to elder sexuality and disprove the myth that older people are nonsexual. Nor are boomers likely to take early retirement. In order to respond to the boomers' increasing demands for adequate health care as they age, medical institutions will be forced to change. "Doctors will lose much of their authority as other professionals [e.g., physician assistants] take over...and patients take more responsibility for treating themselves."

Lifetrends was co-authored by members of a consulting group that specializes in the mature consumer market. The speculations and analysis of possible new trends provide interesting reading for the future-minded American who is pondering the changes that society will undergo in the 21st century.

–Laurie Gill

A TASTE OF THE COUNTRY: A Collection of Calvin Beale's Writings, edited by Peter A. Morrison. A RAND Corporation Research Study. University Park, Pa.: Pennsylvania State University Press, 1990. 249 pages. $28.50 hardback. ISBN 0-271-00631-5.

This compendium of 19 articles and essays assembles in one place three decades of Calvin Beale's observations and studies of U.S. rural areas.

As senior demographer of the Department of Agriculture, Beale has long analyzed U.S. rural, regional, and ethnic population trends. Such research has also been his avocation, for in addition to studying quantitative data, he has made himself familiar on a first-hand basis with seemingly every nook and cranny of the nation.

In the late 1960s, this on-site familiarity helped Beale discover that counter to historical trends and popular preconceptions, the United States's long-running migration from metropolitan to nonmetropolitan areas had shifted into reverse. (But then, as he has said, "people have notions of the trends of society, and they hold them until they are told different.")

His famous essay on the rural revival appears in this book. Also included is a follow-up essay on the revival's aftermath, when Americans resumed beating a path for urban areas.

A Taste of the Country enables the reader to join Beale on his explorations of the United States, including places and ethnic groups that most people have never heard of, much less seen. It's a fascinating book, one that shines with what editor Peter Morrison characterizes as Beale's "encyclopedic knowledge of–and an endless fascination with–regions and places and peoples and how they are intertwined."

–A. H.

SPOTLIGHT

IRAQ

Population (mid-1990 est.): **18.8 million**
Land Area: **167,920 sq.miles**
Population density: **112 per sq. mile**
Births per 1,000 pop.: **46**
Deaths per 1,000 pop.: **7**
Rate of natural increase: **3.9 percent**
Total fertility rate: **7.3 children per woman**
Infant mortality rate: **67 infant deaths per 1,000 live births**
Life expectancy at birth: **67 years**
Capital: **Baghdad**

by Alex de Sherbinin

With the highest natural increase rate of any country (3.9 percent), Iraq has nearly 19 million people, of whom 75-80 percent are Iraqi Arab, 15-20 percent are Kurds, and 5 percent in other minority groups. Bordered by mountain chains to the north and east, and by an arid plateau to the south and west, it is a virtually landlocked nation with few natural resources other than oil and the agricultural area of the Fertile Crescent.

The Crescent's unusual geography, where rivers are actually raised above the surface of the valley on beds of their own deposits, facilitated irrigation and led to the early development of towns and the high level of social organization that state formation entails. The agricultural lands are subject to flooding and salinization, however, resulting in historical fluctuations in population concentrations and variation in the region's fortunes.

Today, Iraq's economy is tied more to the rise and fall of world oil prices than to the water in its rivers. Ninety-five percent of the country's export revenues are derived from oil, whereas agriculture, which involves 35 percent of the population, only accounts for some 10 percent of GNP. Interestingly, Iraq's large population relative to other Arab states makes it less dependent on foreign workers–mostly from poorer Asian nations–and it is therefore considered to be at an advantage in the development of domestic industries. Some 1 million foreigners were residing in Iraq prior to Iraq's recent invasion of Kuwait.

For Saddam Hussein, who succeeded to Iraq's presidency in 1979, a large population and rapid population growth are part of an overall development strategy aimed at exploiting the country's agricultural tracts, abundant water supplies, and mineral resources. In a region of booming population growth, Iraq remains the growth leader. If present rates were to continue, Iraq's population could double in under 20 years.

Much of the current increase may be attributable to the government's pronatalist stance. Families are granted allowances and benefits, and women receive paid maternity leave at 100 percent of earnings for the first 10 weeks, all with the expressed aim of encouraging all women to have a minimum of 4 children. Contraceptive prevalence among currently married women was 14 percent in 1974, and although it has likely increased since then, the government has acted to restrict access to modern contraceptives in recent years.

Improvements in mortality levels have also contributed to growth. The government has done much to improve maternal and child health care, as well as to control diarrhoeal diseases, especially in rural areas.

Due to river flooding, the transportation network is difficult to maintain and rural areas have been left isolated, lagging behind in development. At the same time, this isolation has contributed to the preservation of the country's ethnic minorities, including Persians in the East and pastoral nomads in the West. Iraq's northern Kurdish minority faced Saddam's wrath after their open collaboration with Iran during the Gulf War. In 1988 close to 16,000 fled chemical weapons attacks by the Iraq army, ending up in Turkish refugee camps.

Iraq's recent invasion of Kuwait may only foreshadow more serious conflicts to come, not over oil, but water, the region's original treasure. After Turkey completes the Ataturk dam on the Euphrates, the amount of water flowing through Syria into Iraq could slow to a trickle. The *Christian Science Monitor* of March 8, 1990, warns that "unless population growth rates, now averaging 3 percent in the Middle East, are curbed, excess population will wipe out all projected gains in water development and conservation within 30 years."

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